



Jetstream® CPX-1000 Voice Services Platform Service Release 3.3

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Preface

Use this *CPX-1000 Voice Services Platform Service* manual when performing routine diagnostic testing, maintenance, troubleshooting, and repair.



Note

Throughout this document, the term CPX-1000 refers to the CPX-1000 Voice Services Platform equipment.

Audience

This *CPX-1000 Voice Services Platform Service* manual is written for maintenance testing technicians and engineers.

Organization

The CPX-1000 *CPX-1000 Voice Services Platform Service* manual is organized as follows:

- Chapter 1, General Information, describes the CPX-1000 shelf, components, and modules.
- Chapter 2, Maintenance, describes CPX-1000 software upgrades and periodic maintenance tasks.
- Chapter 3, Troubleshooting, describes CPX-1000 operational and hardware problem isolation and correction.
- Chapter 4, Repair Procedures, describes how to remove and replace CPX-1000 modules and components.
- Appendix A, Replacement Parts, lists CPX-1000 field replaceable parts.
- Appendix B, User Console Commands, describes Console login and user commands.
- Index

Related Documents

This manual is part of the CPX-1000 Voice Services Platform equipment library. The following table lists each of the library documents, describes their purpose, and identifies their intended audience.

Title	Purpose
<i>CPX-1000 Voice Services Platform Introduction and Technical Description</i>	Features and characteristics of the CPX-1000, and its application in a Voice-over Broadband (VoBB) environment.
<i>CPX-1000 Voice Services Platform Installation</i>	Unpacking, installing, powering-up, and testing the CPX-1000 equipment.
<i>CPX-1000 Voice Services Platform Service</i>	Maintenance and repair of the CPX-1000 equipment.
<i>JetCraft User's Guide</i>	Craft (at site, one CPX-1000 at a time) management software.
<i>JetVision User's Guide</i>	This guide documents the use of the JetVision element manager.

Safety Conventions

This section explains the symbols used to identify important notes, and hazardous or dangerous tasks in this guide.

Symbols

The following list describes the level of urgency associated with the symbols shown.



Note
Throughout this guide, the pointing finger highlights important information. Be sure to read this information before continuing.



Warning
Alerts you to an action or inaction that could lead to an injury to yourself or damage to the CPX-1000.



**CAUTION
CLASS 1 LASER**

Alerts you to a laser hazard and instructs you to avoid looking directly into the source of a coherent light (i.e., laser) source.



Voice/Data Interruption

Alerts you to an action that, if done incorrectly, interrupts voice or data traffic.



Electro-Static Caution

Reminds you to take precautions to prevent electro-static damage to static-sensitive assemblies and circuits.



Electrical Warning

Alerts you to an electrical hazard that could result in a fatal injury.

General Safety Precautions

This section presents general safety precautions to observe while working with the CPX-1000. The precautions are presented here and specific precautions are repeated with any procedure to which they apply.

Observe the following safety precautions during all phases of installation, operation, service, and repair of the CPX-1000 Voice Services Platform. Failure to comply with these precautions, or with specific warnings elsewhere in this manual, violates safety standards of design, manufacture, and intended use of this equipment. Paradyne assumes no liability for the customer's failure to comply with these requirements.

The safety precautions listed below represent warnings of certain dangers of which Paradyne is aware. Heed these warnings and all other safety precautions necessary to safely operate the CPX-1000.

Ground the Equipment

To minimize shock hazards, connect the CPX-1000 shelf to frame ground.



Caution

Do not apply power to the CPX-1000 shelf until you have completed all installation procedures in this manual.

Do Not Service or Adjust Alone

Do not attempt internal service or adjustment unless another person capable of rendering first aid and resuscitation is present.

Do Not Substitute Parts or Modify Equipment

Because of the danger of introducing additional hazards, do not install substitute parts or perform any unauthorized modification of the equipment. Contact your local Paradyne representative for service and repair, to ensure that safety features are maintained.

Dangerous Procedure Warnings

Warnings, such as the examples that follow, precede potentially dangerous procedures throughout this manual. Follow the instructions contained in all warnings. Employ all other safety precautions which you deem necessary for installing, operating, and servicing the CPX-1000 in your operating environment.



Danger: Shock Hazard

The CPX-1000 uses -48 VDC or -60 VDC Plant Battery for primary power. This voltage is sufficient to overcome skin resistance and can supply a level of current that can be fatal.

Use extreme caution when working around this voltage during installation, operation, testing, and adjusting.

Remove the voltage at its point of distribution to the CPX-1000, before you connect or disconnect power leads to the equipment.



CAUTION CLASS 1 LASER

Use of controls, adjustment, or performance of procedures other than those specified herein may result in hazardous, invisible radiation exposure.

Module panel indicators are Class 1 LED products.



Warning

Some components of the CPX-1000 Voice Services Platform include field-replaceable batteries. A new battery can explode if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.



Caution

The CPX-1000 shelf weighs 33.5 kilograms (74 lbs.) when fully loaded.

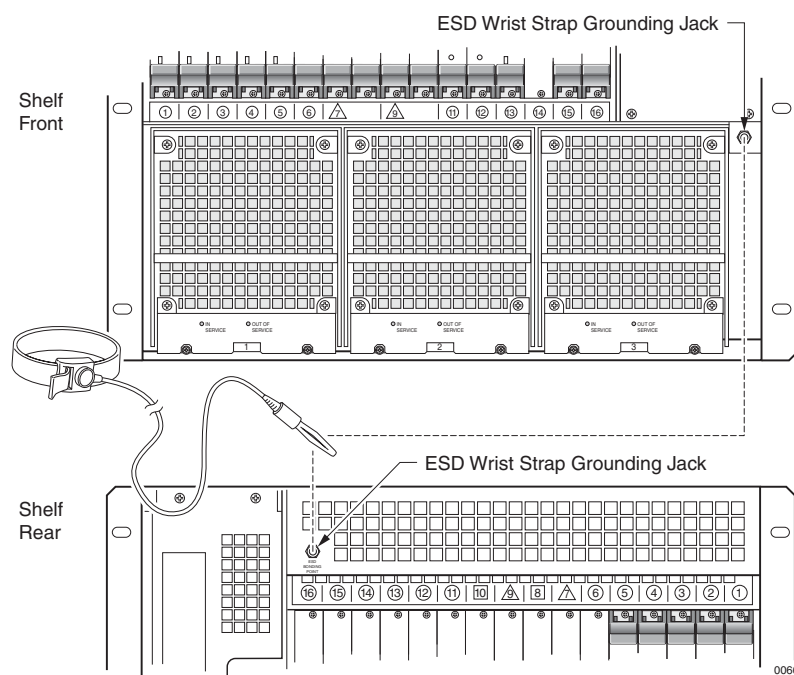
It has a shipping weight of 50 kilograms (110 pounds), including packing material and the pallet to which it is strapped. Use a helper when unpacking, lifting, and moving the shelf.



Electro-Static Caution

The CPX-1000 circuit cards can be damaged by static electricity that builds up on work surfaces and on your body. Static is produced by the everyday movement of your body and is released as an Electro-Static Discharge (ESD) when you touch an object. Observe the following precautions whenever you are working with the CPX-1000.

Always wear a grounded wrist strap to prevent ESD. ESD can damage the CPX-1000 card assemblies and solid state components in the CPX-1000. Attach the wrist strap to the grounding jack located on the front or rear of the equipment.



Handle all printed circuit cards by the face plate, extraction ears, or assembly edges. Never touch the components, conductors, or connector pins.

Always store and transport cards in antistatic packaging. If you remove a card from its slot, always put it into its antistatic package immediately.

Keep static generating materials such as food wrappers, plastics, and polystyrene foam containers away from card assemblies.

Warning Definition



Warning This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

Waarschuwing Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen.

Varoitus Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista.

Attention Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents.

Warnung Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewußt.

Avvertenza Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti.

Advarsel Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du være oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker.

Aviso Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes.

¡Advertencia! Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes.

Varning! Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador.

Current (20A) Warning



Warning This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than -48Vdc or -60Vdc VAC, 20A is used on the phase conductors (all current-carrying conductors).

Waarschuwing Dit product is afhankelijk van de installatie van het gebouw voor kortsluit- (overstroom)beveiliging. Controleer of er een zekering of stroomverbreker van niet meer dan - 48/-60Vdc Volt, 20 A gebruikt wordt op de fasegeleiders (alle geleiders die stroom voeren).

Varoitus Tämä tuote on riippuvainen rakennukseen asennetusta oikosulkusuojauksesta (ylivirtasuojauksesta). Varmista, että vaihevirtajohtimissa (kaikissa virroitetuissa johtimissa) käytetään Yhdysvalloissa alle -48/-60 voltin, 20 ampeerin ja muissa maissa -48Vdc/-60Vdc voltin, 20 ampeerin sulaketta tai suojakytkintä.

Attention Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifier qu'un fusible ou qu'un disjoncteur de -48Vdc ou -60Vdc, 20 A maximum est utilisé sur les conducteurs de phase (conducteurs de charge).

Warnung Dieses Produkt ist darauf angewiesen, daß im Gebäude ein Kurzschluß- bzw. Überstromschutz installiert ist. Stellen Sie sicher, daß eine Sicherung oder ein Unterbrecher von nicht mehr als -48V oder -60V Gleichstrom, 20 A an den Phasenleitern (allen stromführenden Leitern) verwendet wird.

Avvertenza Questo prodotto dipende dall'installazione dell'edificio per quanto riguarda la protezione contro cortocircuiti (sovracorrente). Verificare che un fusibile o interruttore automatico, non superiore a -48 VDC o -60 VDC, 20 A sia stato usato nei fili di fase (tutti i conduttori portatori di corrente).

Advarsel Dette produktet er avhengig av bygningens installasjoner av kortslutningsbeskyttelse (overstrøm). Kontroller at det brukes en sikring eller strømbryter som ikke er større enn –48/60VDC, 20 A på faselederne (alle strømførende ledere).

Aviso Este produto depende das instalações existentes para protecção contra curto-circuito (sobrecarga). Assegure-se de que um fusível ou disjuntor não superior a –48/–60VDC, 20A é utilizado nos condutores de fase (todos os condutores de transporte de corrente).

¡Advertencia! Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del propio edificio. Asegurarse de que se utiliza un fusible o interruptor automático de no más de 48/60 voltios en corriente directa (VDC), 20 amperios del estándar en los hilos de fase (todos aquéllos portadores de corriente).

Warning! Denna produkt är beroende av i byggnaden installerat kortslutningsskydd (överströmsskydd). Kontrollera att säkring eller överspänningsskydd används på fasledarna (samtlige strömförande ledare). -48/-60 V likström, 20 A.

Grounding Requirement Warning



Warning This equipment needs to be grounded. Use a green and yellow 6 AWG ground wire to connect the host to earth ground.

Waarschuwing Deze apparatuur hoort geaard te woden. Gebruik een groen/gele 6 AWG aardedraad om de host tijdens normaal gebruik met de aarde te verbinden.

Varoitus Tämä laitteisto täytyy maadoittaa. Yhdistä isäntälaitte maahan normaalikäytön aikana käyttämällä vihreä-keltaista 6 AWG -maadoitusjohtoa.

Attention Cet équipement doit être relié à la terre. Utilisez un fil vert et jaune de gabarit 6 (AWG) pour connecter l'hôte à la terre lors son utilisation normale.

Warnung Dieses Gerät muß geerdet werden. Verwenden Sie ein grün/gelbes 6-AWG-Erdungskabel, um damit das Host-Gerät während des normalen Betriebs zu erden.

Avvertenza Questa apparecchiatura deve essere collegata a massa. Durante l'uso normale, collegare l'host alla massa di terra usando un filo di massa verde e giallo di diametro pari a 6AWG.

Advarsel Dette utstyret må jordes. Bruk en grønn og gul 6 AWG jordledning til å kople vertsterminalen til jording i løpet av normalt bruk.

Aviso É necessário que este equipamento esteja ligado à terra. Utilize um fio de ligação à terra de 6 AWG, verde e amarelo, para ligar o host à ligação à terra durante a sua utilização normal.

Advertencia Este equipo debe conectarse a tierra. Utilizar un hilo de puesta a tierra 6 AWG verde y amarillo para conectar a tierra el equipo principal durante el uso normal.

Varning! Denna utrustning är avsedd att jordas. Använd en gulgrön jordledning av storlek 6 AWG till att jorda värdenheten vid normal användning.

Installation Warning



Warning Read the installation instructions before you connect the system to its power source.

Waarschuwing Raadpleeg de installatie-aanwijzingen voordat u het systeem met de voeding verbindt.

Varoitus Lue asennusohjeet ennen järjestelmän yhdistämistä virtalähteeseen.

Attention Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

Warnung Lesen Sie die Installationsanweisungen, bevor Sie das System an die Stromquelle anschließen.

Avvertenza Consultare le istruzioni di installazione prima di collegare il sistema all'alimentatore.

Advarsel Les installasjonsinstruksjonene før systemet kobles til strømkilden.

Aviso Leia as instruções de instalação antes de ligar o sistema à sua fonte de energia.

¡Advertencia! Ver las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Varning! Läs installationsanvisningarna innan du kopplar systemet till dess strömförsörjningsenhet.

Jewelry Removal Warning



Warning Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.

Waarschuwing Alvorens aan apparatuur te werken die met elektrische leidingen is verbonden, sieraden (inclusief ringen, kettingen en horloges) verwijderen. Metalen voorwerpen worden warm wanneer ze met stroom en aarde zijn verbonden, en kunnen ernstige brandwonden veroorzaken of het metalen voorwerp aan de aansluitklemmen lassen.

Varoitus Ennen kuin työskentelet voimavirtajohtoihin kytkettyjen laitteiden parissa, ota pois kaikki korut (sormukset, kaulakorut ja kellot mukaan lukien). Metalliesineet kuumenevat, kun ne ovat yhteydessä sähkövirran ja maan kanssa, ja ne voivat aiheuttaa vakavia palovammoja tai hitsata metalliesineet kiinni liitäntänapoihin.

Attention Avant d'accéder à cet équipement connecté aux lignes électriques, ôter tout bijou (anneaux, colliers et montres compris). Lorsqu'ils sont branchés à l'alimentation et reliés à la terre, les objets métalliques chauffent, ce qui peut provoquer des blessures graves ou souder l'objet métallique aux bornes.

Warnung Vor der Arbeit an Geräten, die an das Netz angeschlossen sind, jeglichen Schmuck (einschließlich Ringe, Ketten und Uhren) abnehmen. Metallgegenstände erhitzen sich, wenn sie an das Netz und die Erde angeschlossen werden, und können schwere Verbrennungen verursachen oder an die Anschlußklemmen angeschweißt werden.

Avvertenza Prima di intervenire su apparecchiature collegate alle linee di alimentazione, togliersi qualsiasi monile (inclusi anelli, collane, braccialetti ed orologi). Gli oggetti metallici si riscaldano quando sono collegati tra punti di alimentazione e massa: possono causare ustioni gravi oppure il metallo può saldarsi ai terminali.

Advarsel Fjern alle smykker (inkludert ringer, halskjeder og klokker) før du skal arbeide på utstyr som er koblet til kraftledninger. Metallgjenstander som er koblet til kraftledninger og jord blir svært varme og kan forårsake alvorlige brannskader eller smelte fast til polene.

Aviso Antes de trabalhar em equipamento que esteja ligado a linhas de corrente, retire todas as jóias que estiver a usar (incluindo anéis, fios e relógios). Os objectos metálicos aquecerão em contacto com a corrente e em contacto com a ligação à terra, podendo causar queimaduras graves ou ficarem soldados aos terminais.

¡Advertencia! Antes de operar sobre equipos conectados a líneas de alimentación, quitarse las joyas (incluidos anillos, collares y relojes). Los objetos de metal se calientan cuando se conectan a la alimentación y a tierra, lo que puede ocasionar quemaduras graves o que los objetos metálicos queden soldados a los bornes.

Varning! Tag av alla smycken (inklusive ringar, halsband och armbandsur) innan du arbetar på utrustning som är kopplad till kraftledningar. Metallobjekt hettas upp när de kopplas ihop med ström och jord och kan förorsaka allvarliga brännskador; metallobjekt kan också sammansvetsas med kontakterna.

Lightning Activity Warning



Warning Do not work on the system or connect or disconnect cables during periods of lightning activity.

Waarschuwing Tijdens onweer dat gepaard gaat met bliksem, dient u niet aan het systeem te werken of kabels aan te sluiten of te ontkoppelen.

Varoitus Älä työskentele järjestelmän parissa äläkä yhdistä tai irrota kaapeleita ukkosilmalla.

Attention Ne pas travailler sur le système ni brancher ou débrancher les câbles pendant un orage.

Warnung Arbeiten Sie nicht am System und schließen Sie keine Kabel an bzw. trennen Sie keine ab, wenn es gewittert.

Avvertenza Non lavorare sul sistema o collegare oppure scollegare i cavi durante un temporale con fulmini.

Advarsel Utfør aldri arbeid på systemet, eller koble kabler til eller fra systemet når det tordner eller lyner.

Aviso Não trabalhe no sistema ou ligue e desligue cabos durante períodos de mau tempo (trovoada).

¡Advertencia! No operar el sistema ni conectar o desconectar cables durante el transcurso de descargas eléctricas en la atmósfera.

Varning! Vid åska skall du aldrig utföra arbete på systemet eller ansluta eller koppla loss kablar.

Power Supply Warning



Warning Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is off and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected.

Waarschuwing U dient de voeding niet aan te raken zolang het netsnoer aangesloten is. Bij systemen met een stroomschakelaar zijn er lijnspanningen aanwezig in de voeding, zelfs wanneer de stroomschakelaar uitgeschakeld is en het netsnoer aangesloten is. Bij systemen zonder een stroomschakelaar zijn er lijnspanningen aanwezig in de voeding wanneer het netsnoer aangesloten is.

Varoitus Älä kosketa virtälähdettä virtajohdon ollessa kytkettynä. Virrankatkaisimella varustetuissa järjestelmissä on virtalähteen sisällä jäljellä verkkojännite, vaikka virrankatkaisin on katkaistu-asennossa virtajohdon ollessa kytkettynä. Järjestelmissä, joissa ei ole virrankatkaisinta, on virtalähteen sisällä verkkojännite, kun virtajohto on kytkettynä.

Attention Ne pas toucher le bloc d'alimentation quand le cordon d'alimentation est branché. Avec les systèmes munis d'un commutateur marche-arrêt, des tensions de ligne sont présentes dans l'alimentation quand le cordon est branché, même si le commutateur est à l'arrêt. Avec les systèmes sans commutateur marche-arrêt, l'alimentation est sous tension quand le cordon d'alimentation est branché.

Warnung Berühren Sie das Netzgerät nicht, wenn das Netzkabel angeschlossen ist. Bei Systemen mit Netzschalter liegen Leitungsspannungen im Netzgerät vor, wenn das Netzkabel angeschlossen ist, auch wenn das System ausgeschaltet ist. Bei Systemen ohne Netzschalter liegen Leitungsspannungen im Netzgerät vor, wenn das Netzkabel angeschlossen ist.

Avvertenza Non toccare l'alimentatore se il cavo dell'alimentazione è collegato. Per i sistemi con un interruttore di alimentazione, tensioni di linea sono presenti all'interno dell'alimentatore anche quando l'interruttore di alimentazione è in posizione di disattivazione (off), se il cavo dell'alimentazione è collegato. Per i sistemi senza un interruttore, tensioni di linea sono presenti all'interno dell'alimentatore quando il cavo di alimentazione è collegato.

Advarsel Berør ikke strømforsyningsenheden når strømledningen er tilkoblet. I systemer som har en strømbryter, er det spenning i strømforsyningsenheden selv om strømbryteren er slått av og strømledningen er tilkoblet. Når det gjelder systemer uten en strømbryter, er det spenning i strømforsyningsenheden når strømledningen er tilkoblet.

Aviso Não toque na unidade abastecedora de energia quando o cabo de alimentação estiver ligado. Em sistemas com interruptor, a corrente eléctrica estará presente na unidade abastecedora, sempre que o cabo de alimentação de energia estiver ligado, mesmo quando o interruptor se encontrar desligado. Para sistemas sem interruptor, a tensão eléctrica dentro da unidade abastecedora só estará presente quando o cabo de alimentação estiver ligado.

¡Advertencia! No tocar la fuente de alimentación mientras el cable esté enchufado. En sistemas con interruptor de alimentación, hay voltajes de línea dentro de la fuente, incluso cuando el interruptor esté en Apagado (OFF) y el cable de alimentación enchufado. En sistemas sin interruptor de alimentación, hay voltajes de línea en la fuente cuando el cable está enchufado.

Warning! Vidrör inte strömförsörjningsenheden när nätsladden är ansluten. För system med strömbrytare finns det nätspänning i strömförsörjningsenheden även när strömmen har slagits av men nätsladden är ansluten. För system utan strömbrytare finns det nätspänning i strömförsörjningsenheden när nätsladden är ansluten.

Product Disposal Warning



Warning Ultimate disposal of this product should be handled according to all national laws and regulations.

Waarschuwing Dit produkt dient volgens alle landelijke wetten en voorschriften te worden afgedankt.

Varoitus Tämän tuotteen lopullisesta hävittämisestä tulee huolehtia kaikkia valtakunnallisia lakeja ja säännöksiä noudattaen.

Attention La mise au rebut définitive de ce produit doit être effectuée conformément à toutes les lois et réglementations en vigueur.

Warnung Dieses Produkt muß den geltenden Gesetzen und Vorschriften entsprechend entsorgt werden.

Avvertenza L'eliminazione finale di questo prodotto deve essere eseguita osservando le normative italiane vigenti in materia.

Qualified Personnel Warning



Advarsel Endelig disponering av dette produktet må skje i henhold til nasjonale lover og forskrifter.

Aviso A descartagem final deste produto deverá ser efectuada de acordo com os regulamentos e a legislação nacional.

¡Advertencia! El desecho final de este producto debe realizarse según todas las leyes y regulaciones nacionales.

Varning! Slutlig kassering av denna produkt bör skötas i enlighet med landets alla lagar och föreskrifter.

Warning Only trained and qualified personnel should be allowed to install or replace this equipment.

Waarschuwing Installatie en reparaties mogen uitsluitend door getraind en bevoegd personeel uitgevoerd worden.

Varoitus Tämän tuotteen lopullisesta hävittämisestä tulee huolehtia kaikkia valtakunnallisia lakeja ja säännöksiä noudattaen.

Attention La mise au rebut définitive de ce produit doit être effectuée conformément à toutes les lois et réglementations en vigueur.

Warnung Dieses Produkt muß den geltenden Gesetzen und Vorschriften entsprechend entsorgt werden.

Avvertenza L'eliminazione finale di questo prodotto deve essere eseguita osservando le normative italiane vigenti in materia.

Advarsel Kun kvalifisert personell med riktig opplæring bør montere eller bytte ut dette utstyret.

Aviso Este equipamento deverá ser instalado ou substituído apenas por pessoal devidamente treinado e qualificado.

¡Atención! Estos equipos deben ser instalados y reemplazados exclusivamente por personal técnico adecuadamente preparado y capacitado.

Varning! Denna utrustning ska endast installeras och bytas ut av utbildad och kvalificerad personal.

SELV Circuit Warning



Warning The ports labeled "10BaseT", "Console", "10/100ETHERNET" and "PCMCIA" are safety extra-low voltage (SELV) circuits. SELV circuits should only be connected to other SELV circuits. Because the BRI circuits are treated like telephone-network voltage, avoid connecting the SELV circuit to the telephone network voltage (TNV) circuits.

Waarschuwing De poorten die "10BaseT", "Console", "10/100ETHERNET" en "PCMCIA" zijn gelabeld, zijn veiligheidscircuits met extra lage spanning (genaamd SELV = Safety Extra-Low Voltage). SELV-circuits mogen alleen met andere SELV-circuits verbonden worden. Omdat de BRI-circuits op dezelfde manier als telefoonnetwerkspanning behandeld worden, mag het SELV-circuit niet met de telefoonnetwerkspanning (TNV) circuits verbonden worden.

Varoitus Portit, joissa on nimet "10BaseT", "Console", "10/100ETHERNET" ja "PCMCIA", ovat erityisen pienen jännitteen omaavia turvallisuuspäijrejä (SELV-päijrejä). Tällaiset SELV-päiirit tulee yhdistää ainoastaan muihin SELV-päijreihin. Koska perusluokan liitäntöjen (Basic Rate Interface- eli BRI-liitännät) jännite vastaa puhelinverkoston jännitettä, vältä SELV-päiirin yhdistämistä puhelinverkoston jännitepäijreihin (TNV-päijreihin).

Attention Les ports étiquetés « 10BaseT », « Console », « 10/100ETHERNET » et « PCMCIA » sont des circuits de sécurité basse tension (Safety Extra-Low Voltage ou SELV). Comme les circuits BRI sont considérés comme des sources de tension de réseau téléphonique, éviter de connecter un circuit SELV à un circuit de tension de réseau téléphonique (telephone network voltage ou TNV).

Warnung Die mit "10BaseT", "Console", "10/100ETHERNET" und "PCMCIA" beschrifteten Buchsen sind Sicherheitskreise mit Sicherheitskleinspannung (Safety Extra-Low Voltage = SELV). SELV-Kreise sollten ausschließlich an andere SELV-Kreise angeschlossen werden. Da BRI-Kreise wie Telefonnetzspannungen behandelt werden, ist der SELV-Kreis nicht an Telefonnetzspannungskreise (TNV) anzuschließen.

Avvertenza Le porte contrassegnate da "10BaseT", "Console", "10/100ETHERNET" e "PCMCIA" sono circuiti di sicurezza con tensione molto bassa (SELV). I circuiti SELV devono essere collegati solo ad altri circuiti SELV. Dato che i circuiti BRI vengono trattati come circuiti a tensione di rete telefonica, evitare di collegare il circuito SELV ai circuiti in cui è presente la tensione di rete telefonica (TNV).

Advarsel Utgangene merket "10BaseT", "Console", "10/100ETHERNET" og "PCMCIA" er lavspenkretser (SELV) for ekstra sikkerhet. SELV-kretser skal kun kobles til andre SELV-kretser. Da BRI-kretsene håndteres som telenettspenning, bør du unngå å koble SELV-kretsen til kretser for telenettspenning (TNV).

Aviso As portas com as etiquetas "10BaseT", "Console", "10/100ETHERNET" e "PCMCIA", são circuitos de segurança de baixa tensão (SELV). Estes circuitos deverão ser ligados apenas a outros circuitos SELV. Devido ao facto dos circuitos BRI (Interface de Ritmo Básico) serem tratados como sendo de tensão equivalente à da rede telefónica, evite ligar o circuito SELV aos circuitos TNV (tensão de rede telefónica).

¡Advertencia! Los puertos "10BaseT", "Console", "10/100ETHERNET" y "PCMCIA" son circuitos de muy baja señal que garantizan ausencia de peligro (Safety Extra-Low Voltage = SELV). Estos circuitos SELV deben ser conectados exclusivamente con otros también de tipo SELV. Puesto que los circuitos tipo BRI se comportan como aquéllos con voltajes de red telefónica, debe evitarse conectar circuitos SELV con circuitos de voltaje de red telefónica (TNV).

Varning! De portar som är märkta "10BaseT", "Console", "10/100ETHERNET" och "PCMCIA" är SELV-kretsar, d.v.s. skyddskretsar med extra låg spänning (SELV: Safety Extra-Low Voltage = skyddsklenspänning). SELV-kretsar får endast anslutas till andra SELV-kretsar. Eftersom BRI-kretsar behandlas liksom telefonnätspänning bör SELV-kretsen inte anslutas till telefonnätspänningskretsar (TNV-kretsar).

General Information

This chapter discusses servicing philosophy and resources that keep the CPX-1000 in full operation, including:

- Maintenance (page 1-1)
- Monitoring (page 1-1)
- Troubleshooting (page 1-2)
- Repair (page 1-2)

Maintenance

Air filters remove dust particles from the air before they reach the cooling fans. Clean these air filters periodically to ensure the fans continue to cool the CPX-1000 properly.

Redundancy within the shelf-level components ensures the CPX-1000 continues to handle call traffic without disruption in the event of a failure. Replace inoperative field replaceable units (FRUs) promptly to maintain redundancy protection in the CPX-1000.

Monitoring

Local alarms on the CPX-1000 alarm panel detect and indicates whether a module is enabled or not. These alarms can be reported to other alarm systems in the regional switching center.

Remote monitoring of CPX-1000 operation through a local area network connection enables an operations center to observe CPX-1000 operation.

Integrated communications providers can use Paradyne's Jetstream JetVision product. Users may choose to integrate the CPX-1000 into their own Network Management System or Operations Support System using the CPX-1000's applications programming interface.

Trouble-shooting

When the local access network fails, use one of are two troubleshooting levels to isolate the source of the problem:

- **System-level troubleshooting:** includes alarms, indicators, and messages that isolate the problem to either the CPX-1000, or to cables, ports, or other equipment.
- **Component-level troubleshooting:** use when the problem is with the CPX-1000, includes procedures and tests to isolate the problem to a configuration or provisioning error or a field replaceable unit within the CPX-1000 system.

Most troubleshooting procedures can be done remotely (from the office), while some troubleshooting tests are performed locally (at the site).

Repair

Configuration or provisioning errors can be corrected and/or diagnosed using either JetCraft or JetVision.

Using modular field replaceable units (FRUs) minimizes service downtime during repair and maintenance by enabling quick hardware replacement.

Maintenance

This chapter provides instructions to perform normal maintenance on the CPX-1000. Normal maintenance includes removing, cleaning, and replacing the filters on a regular basis.



Note

To ensure that these filters operate efficiently, clean them at least once every three months and replace them at least every two years.

If the CPX-1000 is mounted at the bottom of an equipment rack, or is installed in a room with a high volume of foot-traffic or a high dust-particle count, more frequent cleaning may be required—perhaps monthly.

Obtaining Replacement Air Filters

Replacement air filters (Motorola Part Number 91-W55663C01A) are available from:

Universal Air Filter Company
1624 Sauget Industrial Parkway
Sauget, IL 62202

Phone: 618.271.7300 or Fax: 618.271.8808

Replacement air filters are also available from Paradyne (Part Number 1000-F1-805).

Replace air filters with a 25 ppi pore size and 63% dust arrest and comply with UL 900 Class V-2 and UL 94 H-1 flammability rating.

Removing, Cleaning and Replacing the Air Filters



The two power supply modules and the fan module (located at the front of the CPX-1000 shelf) are each equipped with a fan filter.

The air filter mounts in a metal frame located in front of the fan on the power supply module (Figure 2-1). The filter frame is held in place by a friction fit with the power supply chassis.

Note

You can remove the filter without removing the power supply module or the fan module.

Step 1

A metal frame encases the filters on each fan module.

Carefully pull out the metal frame that surrounds the filter. Lift this frame away from the power supply module or fan module (Figure 2-1).

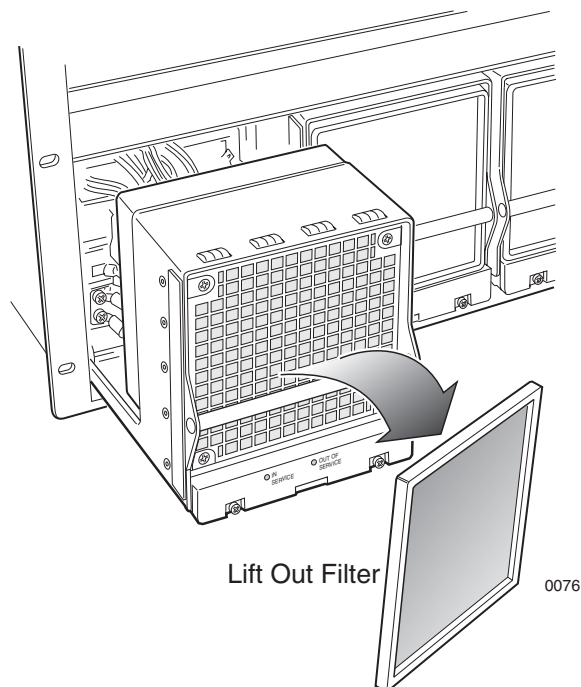


Figure 2-1. Air Filter Removal

- Step 2** Clean the filter in warm, soapy water until no dust remains. (You should be able to run your finger across the filter without the filter changing color or depositing dust on your finger.)
- Step 3** Thoroughly dry the filter.
- Step 4** Reinstall the filter in the fan module or power supply module. (This filter does not have a front or rear, a top or bottom, so there is no wrong way to orient the filter when reinstalling it.)



Tip

Even with regular cleaning, these filters eventually require replacement. Replace the filters approximately every two years.

A good way to determine when a filter requires replacing is to inspect it during routine cleaning. If the holes in the screen mesh appear to vary in size, the filter is wearing out, and needs replacing.

Troubleshooting

This chapter describes CPX-1000 troubleshooting procedures. Some of these procedures use Console commands—refer to Appendix B, User Console Commands.

These procedures are limited to isolating faults to field replaceable units and to configuration or provisioning errors, including:

- General Troubleshooting Guidelines on page 3-2 list suggested steps for isolating and resolving problems.
- System Troubleshooting on page 3-3 starts at the network level and drills down to the CPX-1000 and its field replaceable units.
- Network Management on page 3-4 describes the alarms, indicators and messages for isolating problems down to the CPX-1000 and a module, port, or application.
- Using the Core Console on page 3-6 describes how to access a CPX-1000 remotely. For more details about Console commands, see Appendix B, User Console Commands.
- Troubleshooting the CPX-1000 Shelf on page 3-12 describes how to isolate problems to a field replaceable unit.

General Troubleshooting Guidelines

Use the following list when identifying, documenting, and resolving problems in the CPX-1000:

- **Start with the simple things.**
Always check the power source, check for loose cords and cables, and ensure internal components are secure and properly seated.
- **Document everything.**
Keep written notes about the problem and the various steps to resolve the problem. It may be helpful to also document any suspicions you might have about the cause of the problem, and to develop a troubleshooting action plan.
- **Find out what happened.**
Problems generally happen when something changes or something out of the ordinary happens. Try to determine what changed or what happened just prior to the problem occurrence. Describe, as best you can, the sequence of events leading up to the problem.

For example,

- Was any hardware or software installed, removed, or upgraded?
- Did any kind of power surge or outage occur?
e.g. is there a storm or lightning in the area? Have the lights flickered in your area?
- Was the equipment moved?
- Were changes made to the surrounding or supporting environment that could have an effect on the problem (for example, the building was just rewired or re-cabled)?
- Were network configuration changes made (for example, at the IAD, DSLAM, Packet Switch, or Class 5 switch)?
- Is the problem reproducible?
- Is this the first time the problem has occurred? Or has the problem occurred before and with what frequency?
- Is there a pattern to the occurrence (for example, a specific time of day or after a certain action such as system backups)?
- Is the problem specific to one CPX-1000? To all equipment in the rack?

- **What are the symptoms?**
Seek out as much symptom information as you can, for example:
 - Check the physical equipment for red fault lights.
 - Check the appropriate error files/logs for clues.
 - Check the Console for error messages (Using the Core Console on page 3-6)
- **Make no assumptions.**
Try to recreate or duplicate the problem yourself.

Periodically review the overall picture. If you are still troubleshooting the same problem with the same symptoms—it may be time to change your approach. Try something different.
- **Read the manual.**
A vast amount of knowledge is available to aid in your troubleshooting.
- **Do one thing at a time.**
Take a very systematic approach to the problem.

If you suspect a hardware problem, only swap out one piece of equipment at a time. If that one change has no effect on the problem, put the original piece of equipment back into the system before swapping out anything else.

If you suspect a software or configuration problem, make only one change at a time. Again, if the change has no effect on the problem, change things back to the way they were, so that you are not introducing new problems.

System Trouble- shooting

To isolate the cause of a problem, start at the network level and work your way down to the CPX-1000 shelf:

1. Examine the alarm and event messages displayed on the network management tools.
2. Use the console to remotely Telnet into the CPX-1000 for further troubleshooting.
3. Inspect the CPX-1000 shelf itself.

Network Management

JetVision

JetCraft and JetVision main windows display a graphical representation of the CPX-1000 components that they manage, and the network entities with which they interface. The available network management tools also include JetSNMP.

JetVision is a client-server based Element Management System that provides a persistent view of managed CPX-1000 systems. JetVision can concurrently manage up to 50 CPX-1000s and is supported on both the Sun Solaris and Windows platforms.

After successfully logging into JetVision, the Main window displays a geographical map (Figure 3–1). The Alarms at the top indicate alarm and event information.

Refer to the *JetVision User's Guide* for additional information.

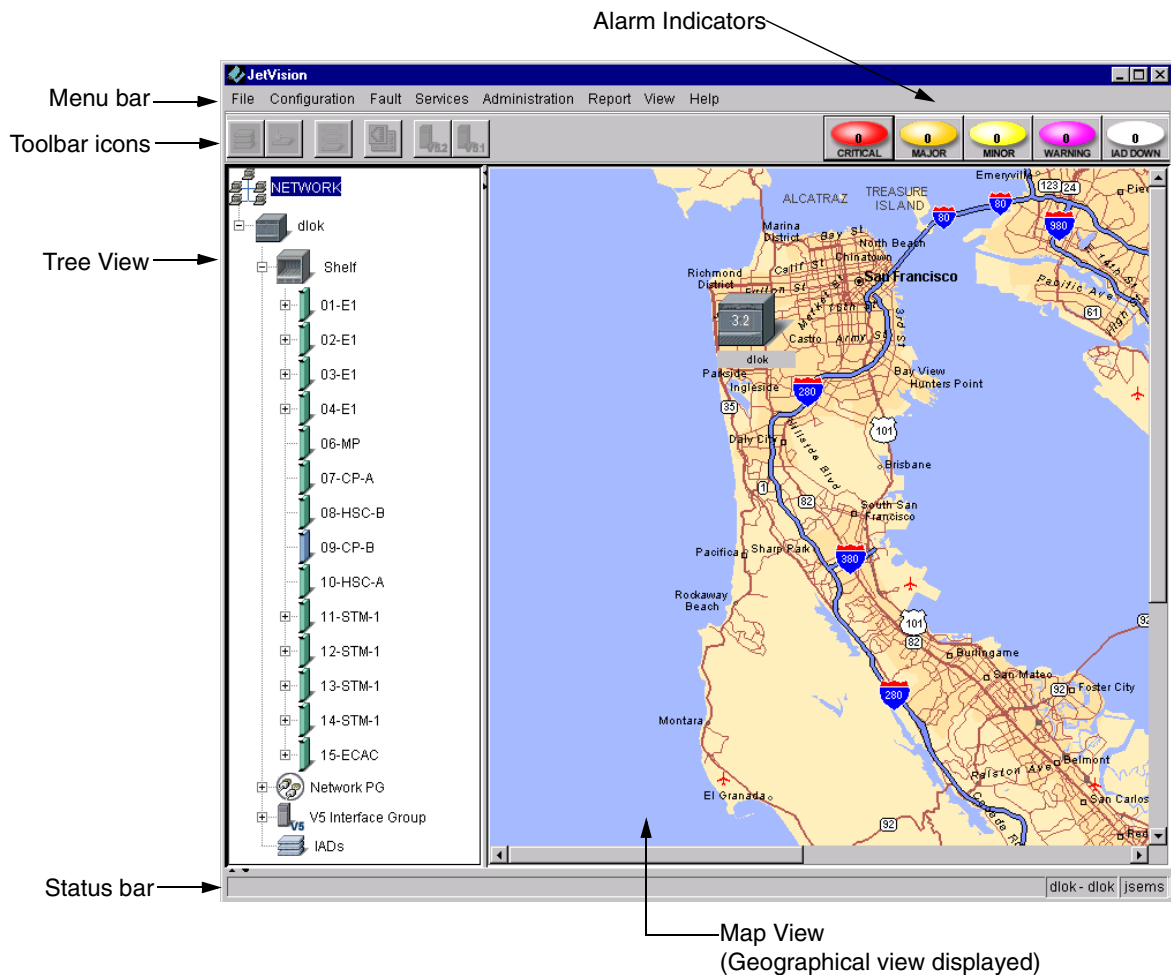


Figure 3–1. JetVision Main Window

JetWay

JetWay is the northbound (upstream) Applications Programming Interface (API) to JetVision that enables either Network Management Systems (NMS) or Operations Support Systems (OSS) to manage the CPX-1000.

JetWay APIs enable integrated management systems to be developed and delivered into Network Management Systems for provisioning, fault and performance management.

JetCraft

JetCraft is a Windows-based Craft Interface Terminal package for per-session management of a single CPX-1000 system.

In the JetCraft Main window (Figure 3–2), alarmed modules are marked with an 'X' over the icon image of the module. The Alarm list window at the bottom displays alarm and event information.

Refer to the *JetCraft User's Guide* for additional information.

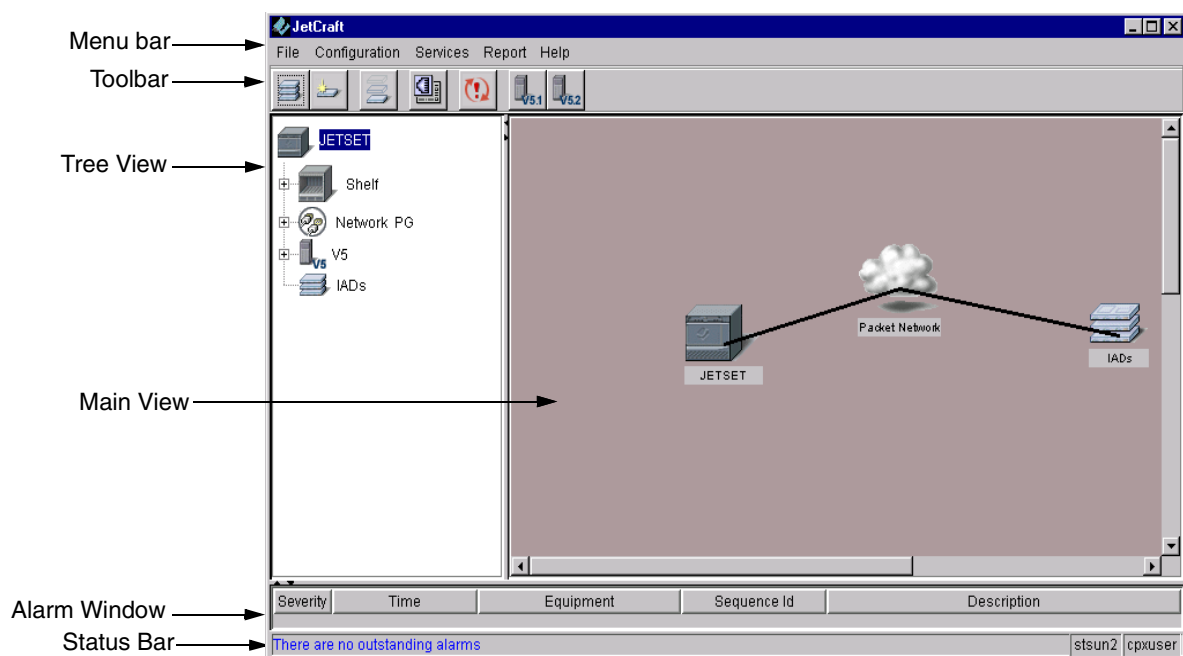


Figure 3–2. JetCraft Main Window

Alarm Window

The Alarm window on JetCraft describes alarms and events, their severity level, time, what equipment, slot ID, port number, and message type (alarm or event).

Follow this order for resolving CPX-1000 problems through the JetCraft alarm window:

1. Display the Main window on the monitor.
2. Identify the failed module in the alarm window.
3. Write down the description, module type, slot number, and port number.

Consult the Statistics Summary section in Chapter 10 of the *JetCraft User's Guide* for an description of the error types.

JetSNMP

JetSNMP is a CPX-1000 native interface that allows SNMP Managers (e.g., HP Open View) to discover and monitor CPX-1000 systems. JetSNMP provides fault management (version 2) for the CPX-1000 and associated IADs to allow alarm reporting and surveillance with industry standard network management tools.

JetSNMP supports:

- JetSNMP traps (notification of alarm/alert situations)
- JetSNMP alarm table (retrieval of up to 550 alarms from the CPX-1000)
- Discovery of the CPX-1000 configuration

JetSNMP can handle *request from* and *trap forwarding* to multiple network management stations with the **Get** and **Get Next** commands.

Refer to the *CPX-1000 Release 2.1 SNMP MIB Application Notes* for additional information.

Using the Core Console

The Core Console resides in each CP module. The CPX-1000 core console enables remote troubleshooting of the CPX-1000. Appendix B, User Console Commands describes each command.

When you first log in there are two default types of access and default usernames and passwords assigned to them:

Type of access	User Name	Password
Normal Operator	user	user
Administrator	admin	admin

Logging Into Core

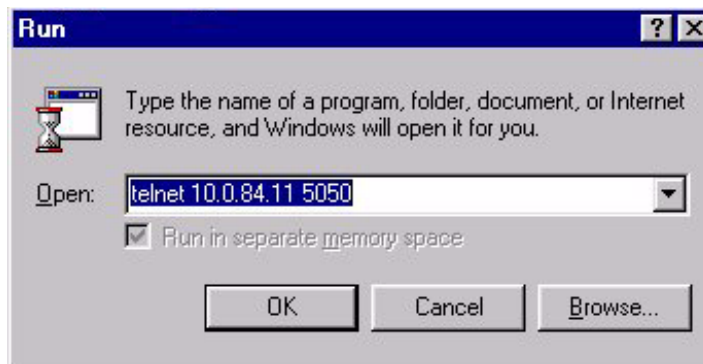
To log into the control console, Telnet to port 5050 (CP-A) or 6050 (CP-B) on the CPX-1000 and enter the username and password:

CPX Telnet address:

- CP-A: 5050
- CP-B: 6050

Step 1

From the Start menu on your PC, click Run and enter the IP address and CP number (5050 or 6050):



Notes

Since command lines are case sensitive, the software automatically converts entries to lower case.

The Up and Down arrows show the command history.

To allow spaces in a command line argument, surround the whole argument in double-quotes.

Press the ESCAPE key to cancel the current command line.

Step 2 Enter user or admin name and password.

```

Telnet - 10.0.84.11
Connect Edit Terminal Help
Welcome to the Jetstream CPX-1000

Username: admin
Password: *****

[A:AC] Cpx>
  
```

Table 3-1. CP High Availability states

State	Description
AC	Active
HS	Hot Standby
GA	Going Active
GS	Going Hot Standby
UK	Unknown
??	Error
CS	Cold Standby

Step 3 To see what commands are available to your username (user or admin) type ?

```

nc4mp - CRT
File Edit View Options Transfer Script Window Help

[A:AC] Cpx>
[A:AC] Cpx> help
help
<***** Commands Summary *****>
? -- Displays a command summary or usage information
clocking -- Displays the active clock source, which can be BITS, IFG/DS1
crv -- Displays details for all ports in a V5 interface group
exit -- Ends the current console session
help -- Displays a command summary or usage information
setpassword -- Changes password of a user
showadminstate -- Shows the administrative state of the specified component
showclock -- Prints the entire clock priority table
showcac -- Show resource usage for all ECAC cards
showport -- Displays information on the specified port
showportgroups -- Lists all ATM portgroups
showpps -- Shows which CCS and EOC links are currently active
showpstnpg -- Displays information about PSTN protection groups
stats -- Displays statistics for the component specified
status -- Displays the operational status of various system components
sub -- Displays subscriber summary or details
v5ifstat -- prints status of V5 interface in trace log
v5lnstat -- print E1 Link state
v5protstat -- reports link ID and time slot for given C-channel ID
version -- Shows CPX software version
  
```

Step 4

The key to gathering Telnet info is the?:

Cpx> ? – Displays a summary of all the commands

Cpx> ? **<command name>** – Displays detailed help on
<command-name>

Cpx> **<command-name>** ? – Displays detailed help about
<command-name>

**Notes**

The CPX-1000 does not support partial command prompting. Type in the entire command.

All <bracketed> text in these screens represent numeric values.

Step 5

Type *exit* to quit the Telnet session.

User Console Commands

The following commands are most commonly used in service and maintenance:

?

Displays a command summary or usage information

clocking

Displays the E1 port that's sourcing the network clock reference.

Usage:

```
Cpx> clocking
```

**Note**

Board number is *not* the same as slot number.

Board number is determined by order of initialization (initialization order is slots 1 to 6 and then slots 16 to 9).

Boards are numbered 1 through n

Lines are numbered 0 through 7

crv

Displays CRV details for all ports in a V5 interface group.

Typing:	Displays
Cpx> <i>crv</i> <ifg> <i>all</i>	All CRVs or L3 addresses in Interface Group <ifg>

exit

Ends the current console session.

Usage:

```
Cpx> exit
```

help

Displays a command summary or usage information. Usage:

```
Cpx> help – Displays a summary of all the  
          commands available
```

```
Cpx> help <command name> – Displays detailed  
                          help on <command-name>
```

```
Cpx> <command-name> help – Displays detailed  
                          help on <command-name>
```

setpassword

To change default password; use set password cond:

Setpassword<username><new password>

Example:

```
[A:AC] cpx. setpassword user user1
```

showadminstate

Shows the administrative state of the specified component.

Usage:

```
Cpx> showadminstate portgroups
```

```
Cpx> showadminstate ports
```

showclock

Prints the entire clock priority table.

Usage:

```
Cpx> showclock
```

showecac

Show resource usage for all ECAC cards.

Usage:

```
Cpx> showecac
```

showport

Displays information on the specified port.

Usage:

```
Cpx> showport
```

showportgroups

Lists all ATM portgroups

Usage:

```
Cpx> showportgroups
```

showpps

Shows which CCS and EOC links are currently active.

Usage:

```
Cpx> showpps
```

showpstnpg

Displays information about PSTN protection groups.

Usage:

```
Cpx> showpps
```

stats

Displays statistics for the component specified.

Usage:

```
Cpx> stats sys
Cpx> stats ifg <ifg>
Cpx> stats ds1 <ifg> <ds1>
Cpx> stats sub <sub>
Cpx> stats port <sub> <port>
Cpx> stats atm <device>
```

status

Displays the operational status of various system components.

Usage:

```
Cpx> status software – Displays status of the
                      system software links
Cpx> status atm – Displays status of ATM ports
                  and portgroups
Cpx> status sub <sub> – Displays status of a
                      subscriber
```

sub

Displays subscriber summary or details.

Usage:

```
Cpx> sub – Displays valid sub ranges
Cpx> sub <sub> – Displays detailed info for
               <sub>
Cpx> sub <sub1> <sub2> – Displays summary for
                       range <sub1> to <sub2>
```

v5ifstat

Prints status of V5 interface in trace log.

Usage:

```
Cpx> v5ifstat <ifnum x> - Prints status of
                        specified interface
                        number.
```

v5lstat

Print E1 Link state.

Usage:

```
Cpx> v5lstat <intf> <link> - Prints state of
                        specified interface ID
                        and specified link ID.
```

v5prostat

Reports link ID and time slot for given C-channel ID.

Usage:

```
Cpx> v5prostat <intf> <chan ID> - Reports link
                        ID and time slot for
                        specified interface ID
                        and specified protected
                        logical C-channel ID.
```

Trouble- shooting the CPX-1000 Shelf

Alarm Panel Indicators

Use this sequence for troubleshooting the CPX-1000 shelf:

1. Check the alarm panel indicators
2. Troubleshoot the line modules
3. Troubleshoot the power modules

The Alarm Panel indicators on the CPX-1000 are divided into three groups:

- Slot Status indicators (Table 3–2)
- System Status indicators (not supported in this release)
- Telco Alarm indicators (Table 3–4)

Check the Alarm panel indicators (Figure 3–3) as follows:

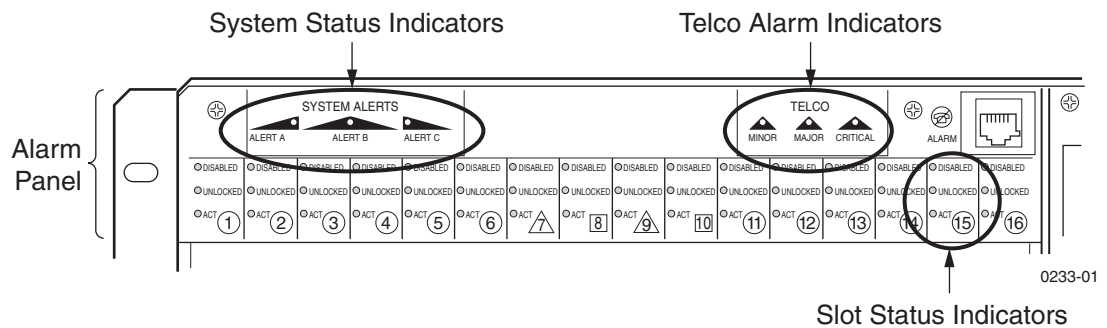


Figure 3–3. CPX-1000 Alarm Panel

Table 3–2. Slot Status Indicators

Indicator	Color	Definition
Disabled	Red	Lights when the card cannot provide services, but is not locked (see below).
Unlocked	Green	Green when the card is discovered, initialized, and placed in service (able to carry traffic). Off when the card is locked (no traffic).
Act (Active)	Amber	Lights for the active CP, HSC, and ATM cards. Indicates unlocked (with green LED) states for the E1 and EC cards. The ACT LEDs indication depends the type of module in the slot.

When all slot status indicator LEDs are off, either that card is not detected by the system, or it is removed from system use and ready for physical removal from the CPX-1000 shelf.

Table 3–3 shows the normal activity indicator usage by module.

Table 3–3. Normal Activity Indicator Usage

Module	Normal Usage
ATM	Active ATM modules will have ACT ive lit; standby module lights not lit
CP/HSC	Active CP/HSC module will have ACT ive lit
EC	All unlocked EC modules are lit
MP	ACT ive always lit
E1	All unlocked E1 modules are lit

Table 3-4. Telco Status Indicators (1 of 2)

Symptom	Possible Cause	Further Isolation of Alarm
CRITICAL indicator is on	ATM Ports	ATM adaptive recovery scheme alarm DS3 far end alarm indication state DS3 loss of frame alarm DS3 loss of signal alarm Lost physical connection No adapter is driving the TDM master clock OAM Line AIS alarm OAM Line RDI alarm OAM Path AIS alarm OAM Path RDI alarm SONET lost frame SONET lost signal SONET path lost pointer Unknown alarm
	CP Card	MP lost connection to active CP
	CPX Shelf	CPX is down Loss of communication with network management system E1 Transition card missing
	IAD	IAD configuration error
	Protection Group	Card does not exist or is not an ATM card Port does not exist
MAJOR indicator is on	ATM Ports	DS3 far end receive failure DS3 loss of cell delineation state DS3 out of cell delineation state DS3 red alarm
	CP Card	MP lost connection to CP CP has been removed CP is faulty CP lost heartbeat to peer CP

Table 3-4. Telco Status Indicators (2 of 2)

Symptom	Possible Cause	Further Isolation of Alarm
MAJOR indicator is on (Continued)	CPX Shelf	Error in database or error accessing configuration database, CPX operation type resulted in an error General system alarm
	IAD	IAD unknown alarm Lost link with IAD Provisioned ports are greater than the reported ports
	IAD Ports	IAD port alarm
	Interface group	alarm Card on a slot is not an E1 card Link – Unknown alarm Missing E-1 card on slot Missing E-1 port for E-1
	E1 Ports	E-1 – Lost frame sync – Red alarm E-1 – Received remote alarm indication – Yellow alarm E-1 – Received remote alarm signal – Blue alarm E-1 – Software error in DS0 read (call Paradyne Technical Support) E-1 – Unknown alarm
MINOR indicator is on	Not used as of Release 3.0.	

Module Troubleshooting

Before performing a module fault isolation:

1. Verify that the board and all other internal components are securely and properly seated.



Warning

Take care not to damage or bend the connector pins, and avoid touching areas of integrated circuits.

2. Check Table 3-5 for information to troubleshoot a CP module.



Voice/Data Interruption

Do not press the **RST** button on the CP module. Doing so resets the CPX-1000 shelf and interrupts all calls.

3. Refer to Table 3-6 when troubleshooting the MP module.
4. Refer to Table 3-7 when troubleshooting Octal E1 module.
5. Refer to Table 3-8 when troubleshooting the ATM module.
6. Refer to Table 3-9 when troubleshooting the Ethernet LAN port.

Table 3-5. CP Module Troubleshooting

Symptom	Probable Causes	Corrective Action
PWR indicator is off	CPX-1000 is not powered up.	Verify that the CPX-1000 is receiving -48 or -60 Vdc from the plant battery.
	CP module did not initialize properly upon system power-up.	Turn the CPX-1000 rear circuit breaker off, then on again to cycle power to the CP module and reinitialize it.
	CP module is faulty.	Replace the CP module (Hot Swapping CP and HSC Cards on page 4-19)

Table 3-6. MP Module Troubleshooting

Symptom	Probable Causes	Corrective Action
PWR indicator is off	CPX-1000 is not powered up.	Verify that the CPX-1000 is receiving –48 or –60 Vdc from the plant battery.
	MP module did not initialize properly upon system power-up.	Turn the CPX-1000 rear circuit breaker off and on to cycle power to the MP module and reinitialize it.
	MP module is faulty.	Make sure the CP module is initialized, to power the MP card. Replace the MP module (Hot Swapping an MP Card on page 4-18).
Ethernet green indicator is off	MP-to-LAN interface is faulty.	Troubleshoot the LAN (Table 3-9 on page 3-20).

Table 3-7. Octal E1 Module Troubleshooting

Symptom	Probable Causes	Corrective Action
No indicators are lit on the Octal E1 module.	CPX-1000 is not powered.	Verify that the CPX-1000 is receiving –48 or –60 VDC from the plant battery.
	Software error occurred on the CP module, preventing the Octal E1 module from initializing.	Power down the CPX-1000, then reapply power by turning its circuit breaker switch off, then on again (Figure 3-4 on page 3-23).
	Octal E1 module is faulty.	Replace the Octal E1 module (Module Troubleshooting on page 3-16)

Table 3-7. Octal E1 Module Troubleshooting (Continued)

Symptom	Probable Causes	Corrective Action
FAIL indicators are lit and/or RUN indicators are off on all Octal E1 modules in the CPX-1000.	Software error occurred on the CP module, causing the Octal E1 modules to initialize improperly.	1. Turn the CPX-1000 rear circuit breaker switch off, then on again, to cycle system power and reinitialize the system. 2. After the system initializes, verify that the FAIL indicators are off and the RUN indicators are lit on all Octal E1 modules.
	CP module is faulty.	Perform CP switchover to standby and, if necessary, swap out ((Hot Swapping CP and HSC Cards on page 4-19). Replace the CP module ((Hot Swapping CP and HSC Cards on page 4-19).
FAIL indicator is lit and/or RUN indicator is off on a single Octal E1 module; all other Octal E1 modules show normal FAIL and RUN indicator states.	Octal E1 module is faulty.	Replace the Octal E1 module (Module Troubleshooting on page 3-16).
	Software error occurred on the CP module, causing the Octal E1 module to initialize improperly.	1. Turn the CPX-1000 rear circuit breaker switch off, then on again, to cycle system power and reinitialize the system. 2. After the system initializes, verify that the FAIL indicator is off and the RUN indicator is lit on the Octal E1 module.
Blue indicator is lit at the bottom of an Octal E1 module.	Octal E1 module is not fully inserted in its card cage slot.	1. Unplug the Octal E1 module and reinsert it (Module Troubleshooting on page 3-16). 2. After the system is powered up and initialized, verify that the blue indicator of the Octal E1 module is off.
	Octal E1 module was locked and removed, using the Remove Resources command	1. Pull out card and re-insert 2. E1 driver is automatically downloaded

Table 3–7. Octal E1 Module Troubleshooting (Continued)

Symptom	Probable Causes	Corrective Action
Primary C Channel is down	The connection between the CPX-1000 and the Class 5 switch has been lost.	1. Verify that the E1 signal is up between the Class 5 switch and the CPX-1000. 2. Verify that the interface group is active in the Class 5 switch.
Secondary C Channel is down	The connection between the CPX-1000 and the Class 5 switch has been lost.	1. Verify that the E1 signal is up between the Class 5 switch and the CPX-1000. 2. Verify that the interface group is active in the Class 5 switch.
V5.1 or 5.2 interface will not come into service	V5 dataset does not match between the LE and the AN	Reconfirm the V5 provisioning data. The data set information, such as LE ID and Variant ID, must match exactly what the LE is using.
	One or more of the E1 links is incorrectly connected.	1. Reconfirm that the physical E1's plugged into the OctalE1 card are in the correct order, and match the provisioned data. 2. Confirm that the E1's link ID's that are provisioned in JetCraft match exactly to the E1's plugged into the Octal E1 card.
	One or more of the E1 links has a mismatched CRC4 setting between the LE and the CPX-1000	By default the CPX-1000 expects CRC4 to be enabled on all E1 links. If this is not the case then the E1's will not come into service. This might also prevent the interface from coming into service. Enable CRC4 on all E1s at the LE. Note: It is possible to disable CRC4 at the CPX. However, this will disable CRC4 for ALL E1s on the entire unit. For assistance contact Paradyne support.

Table 3–8. ATM Module Troubleshooting

Symptom	Probable Causes	Corrective Action
Tx and/or Rx indicators are off.	Software error occurred on the CP module, causing the ATM module to initialize improperly.	1. Turn the CPX-1000 rear circuit breaker switch off, then on again, to cycle system power and reinitialize the system. 2. After the system initializes, verify that the Tx and/or Rx indicators are either lit or flashing on the ATM module.
	ATM module is faulty.	Replace the ATM module (Module Troubleshooting on page 3-16).

Table 3–9. Ethernet LAN Troubleshooting

Symptom	Probable Causes	Corrective Action
Ethernet link (green) indicator is not lit.	The MP module is not connected to the LAN.	Connect the MP Transition card Ethernet 1 port to the LAN hub or router.
	Ethernet LAN is down.	Problem in the Local Area Network, external to the CPX-1000. Contact the LAN administrator to determine the current LAN status.
	Faulty cabling between the CPX-1000 and another LAN device.	Replace the MP Transition card interconnect cable to the LAN hub or router with a functional cable.
	The MP module is faulty.	Replace faulty MP Transition card
PING test failed (unable to ping the CPX-1000 from another device connected to the LAN).	Same as for abnormal MP, XMT, and RCV indicator states listed in this table.	Take the corrective actions described above.

Power Module Troubleshooting

Step 1

Use this section to isolate CPX-1000 power problems.

Isolate a problem to one or more modules before troubleshooting:

After applying power, wait at least two minutes for the system to initialize. If none of its front panel indicators light and its internal fans are not working, refer to Troubleshooting Instructions listed in Table 3–10.



Note

The CPX-1000 may take several minutes to initialize, depending on how many Octal E1 and ATM modules are installed. The CP module initializes first, followed by the other plug-in modules.

Step 2

Check the indicators on the CPX-1000 plug-in modules to verify that the modules are operating correctly. If the indicator states are incorrect on any module, identify the module type, and refer to the appropriate table for corrective action.

Table 3–10. Power Failure Troubleshooting

Symptom	Probable Causes	Corrective Action
All CPX-1000 plug-in module indicators are off.	A momentary power surge has tripped the CPX-1000 circuit breaker, powering down the system.	Turn the circuit breaker on to apply power to the CPX-1000.
	Faulty –48 or –60 VDC output wiring, from the plant battery distribution point to the CPX-1000.	1. Check the –48 VDC and battery return connections between the power source and the –48 VDC A and B terminals of the CPX-1000 (Figure 3–4). 2. Replace faulty wiring as required.
	Plant battery source is faulty.	1. Verify that the –48 or –60 VDC plant battery has the correct polarity. 2. Using a voltmeter, measure the plant battery voltage at the power distribution point (should be –42 VDC to –72 VDC).
Out Of Service indicator is lit on a power supply module.	Power supply module is faulty.	Replace the power supply module (Install Fan/Power Supply on page 4-5).
Power Supply indicators are not lit on any power supply modules.	CPX-1000 is not powered.	Perform system power failure troubleshooting.
Cooling failure on one power supply	Fan failure or jammed fan shutter.	Replace the power supply.
Cooling failure for more than one power supply.	Airflow blockage.	1. Check air inlets and outlets for obstructions. 2. Clean or replace the air filters.
	Ambient air temperature too high.	Reduce the ambient air temperature.

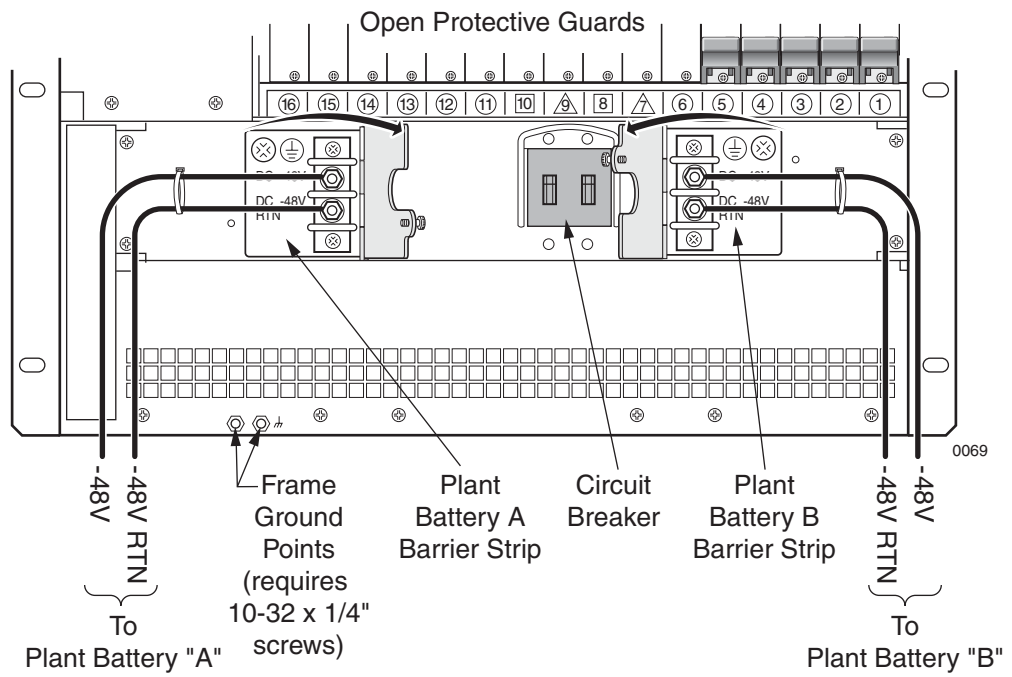


Figure 3-4. DC Power Distribution Panel

Repair Procedures

Use these procedures when removing and installing the CPX-1000:

- Power supplies (page 4-2)
- Replacing inoperative Fans (page 4-4)
- Alarm card (page 4-6)
- Power distribution panel (page 4-8)
- Module removal (page 4-11)



Danger: Shock Hazard

The CPX-1000 uses a -48 or -60 VDC plant battery for primary power. This voltage is sufficient to overcome skin resistance and can supply a level of current that can be fatal.

Use extreme caution when working around this voltage, during installation, operation, testing, and adjusting.

Remove the voltage at its point of distribution to the CPX-1000, before you connect or disconnect power leads to the equipment.

Recommended Power Off

The following procedure is recommended when powering off the CPX-1000:

Step 1

Shut down all software operations (JetVision, JetCraft).

Step 2

Flip the rocker switch in the rear of the shelf to the “0” position.

This removes input power for all power supplies. In dual-configured systems, both domains lose input power.

Emergency Power-Off

In the event of an emergency, flip the rocker switch in the rear of the chassis to the “0” position. This removes input power from the power supplies and results in an abnormal system shutdown.



Voice/Data Interruption

Emergency power-off interrupts all traffic through the CPX-1000. Use these steps only when normal shutdown procedures cannot be followed.

Power Supply

The CPX-1000 supports redundant power supplies, installed in the left and right front side slots of the shelf. The fan-only module is in the middle of the shelf. If the system is equipped with a redundant power supply, removing a single power supply does not interrupt system operation.

Use the following procedures when removing and installing a power supply. These procedures also apply to the fan-only filter module.

Remove Fan/ Power Supply Module

To remove a fan/power supply module, see Figure 4-1 and follow these steps:

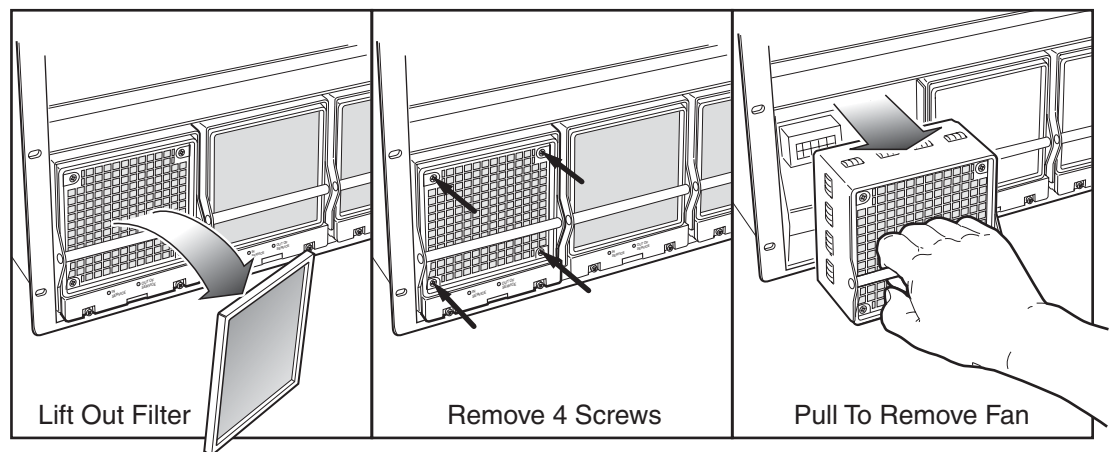
Step 1

If the system is *not* equipped with a redundant power supply, and you are removing one of them, shut the system down (Recommended Power Off on page 4-2).

If the system *is* equipped with a redundant power supply, or if the system is *not* equipped with a redundant power supply but you are removing the fan-only module, the system can remain operational during this procedure.

Step 2

Loosen the two captive screws located at the bottom of the fan/power supply module you are removing.



0178

Figure 4-1. Fan Power Supply Module Removal/Installation



Danger: Shock Hazard

The CPX-1000 uses a -48 or -60 VDC plant battery for primary power. This voltage is sufficient to overcome skin resistance and can supply a level of current that can be fatal.

Use extreme caution when working around this voltage, during installation, operation, testing, and adjusting.

Step 3

Using the handle on the front of the fan/power supply module, slowly pull the Power Supply straight out of the chassis. Support the module from the bottom, and lift the back edge of it over the front lip of the chassis.

Replacing Inoperative Fans

If the CPX-1000 is powered up, but a fan in a power supply module, or the independent fan module is not running, replace the affected fan assembly (Figure 4–2), Fan only module.

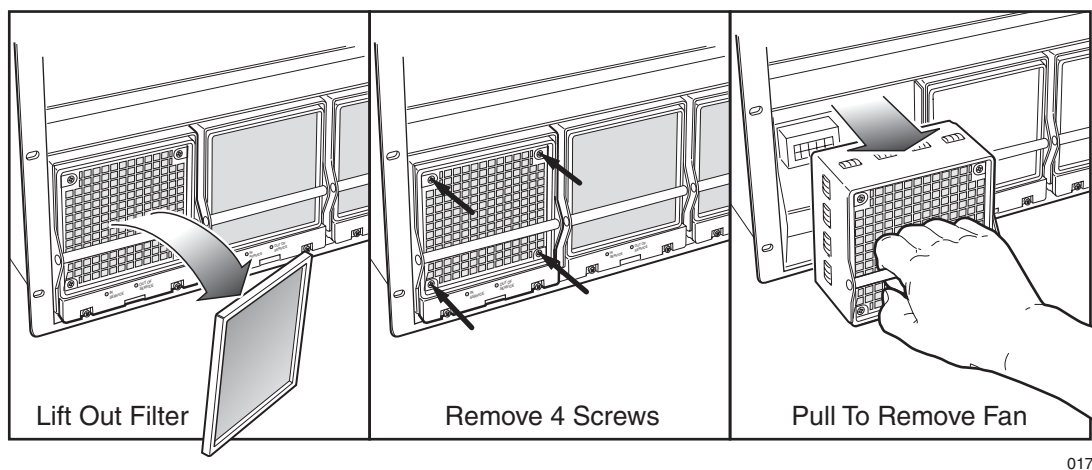


Figure 4–2. Removing Fan From a Power Supply

To replace (hot swap) a power supply fan without removing the power supply or turning off power:

- Step 1** Have the new fan on hand, ready to install, before removing the old fan.
- Step 2** Remove the filter from the power supply (Removing, Cleaning and Replacing the Air Filters on page 2-2). Removing the filter exposes four screws that attach the fan to the power supply.
- Step 3** Loosen the four screws that attach the fan to the power supply.
- Step 4** Pull the handle of the power supply straight out (toward you) as you would to remove the entire power supply.



Warning

Do not operate the CPX-1000 for more than 15 minutes without a fan. The power supply module can overheat when operating without a fan.

Step 5

Within 15 minutes after removing the old fan, insert the new fan into the Power Supply module.



Note

Ensure that the electrical plug on the fan snaps into the electrical receptacle of the power supply module.

Step 6

Tighten the four screws that attach the fan to the power supply.

Step 7

Reinstall the front fan filter on the power supply module.

Install Fan/ Power Supply

Step 1

Slowly slide the fan/power supply module into the chassis. Guides on the chassis, and rails on the module, assist in properly aligning the module during insertion.



Caution

Insert the fan/power supply module with a single, steady motion. Bouncing the module during insertion can cause an alarm condition in the system. Also, do not force the module into the slot.

To avoid crushing or bending the power supply pins, back the module out, and re-insert it if it does not fully insert into the slot. Do not slam the power supplies into the shelf.

Step 2

Tighten the two captive screws located on the bottom front of the fan/power supply module.

Alarm Panel

The alarm panel is hot-swappable, you can remove it from a live system without adversely affecting system functions or performance.

Removing the Alarm Panel

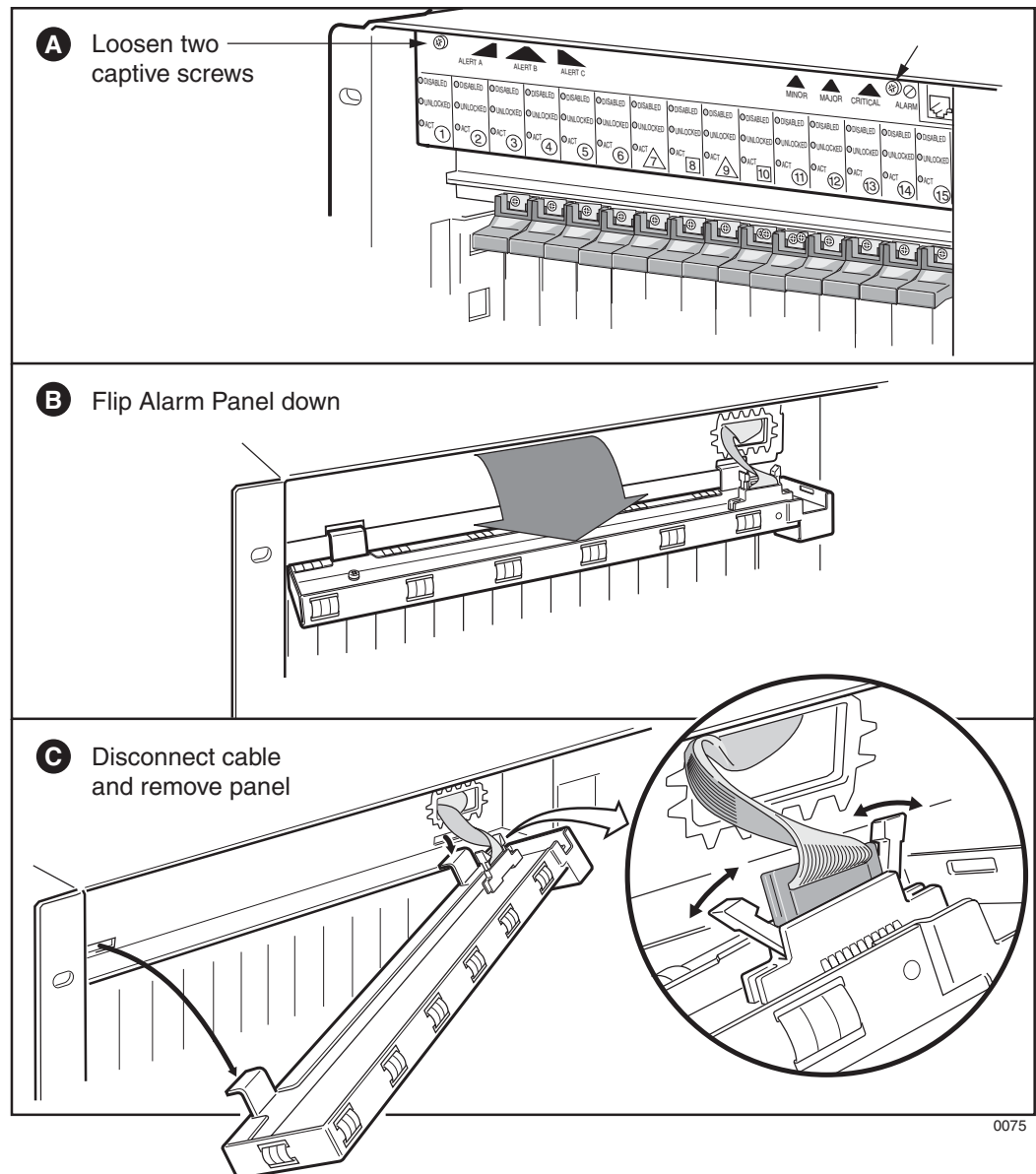
To remove the Alarm panel, see Figure 4-3 and:

- Step 1** Loosen the two captive screws at the top of the Alarm panel.
- Step 2** Pull the top of the Alarm panel away from the chassis. You may need to pull the two captive screws to assist you.
- Step 3** Guide the two tabs at the bottom of the Alarm panel out of their slots in the chassis.
- Step 4** Remove the alarm cable by pushing the two retaining clips out. This forces the connector off of the header.



Note

The critical alarm is a normally closed relay. If the alarm panel is connected to remote alarm monitoring equipment, removing the system alarm cable can result in a critical alarm report.

**Figure 4-3. Alarm Panel Removal**

Installing the Alarm Panel

- Step 1** Insert the alarm cable connector into header J4 on the alarm panel. The cable connector and header are keyed—they fit together only in the proper direction. The retaining clips close as the connector seats.
- Step 2** Gently squeeze the retaining clips towards each other to ensure that they are fully closed and that the connector is fully seated.
- Step 3** Guide the tabs at the bottom of the Alarm card into their slots in the chassis.
- Step 4** Push the top of the Alarm card towards the top of the chassis and secure the Alarm card with the two captive screws provided.

Power Distribution Panel



The Power Distribution Panel is *not* hot-swappable. Removing the panel removes power from the the power supplies.

Voice/Data Interruption

Removing power shuts down the CPX-1000. Shutting down the CPX-1000 disrupts all calls and interrupts service.



Note

You do not need to remove the power supplies to remove or install the Power Distribution Panel, although backing the power supplies out slightly may facilitate installing the panel.

Removing Power Distribution Panel

To install the Power Distribution Panel, see Figure 4-4 and:

- Step 1** Shut down the operating system. If the system is configured as a dual-CP system, ensure that both domains are shut down.
- Step 2** Turn the system power off (Recommended Power Off on page 4-2).
- Step 3** Remove the power cord from the Power Distribution Panel.
- Step 4** Loosen the four captive screws on the corners of the Power Distribution Panel.
- Step 5** Pull the Power Distribution Panel straight out of the chassis.



Note

You may need to pull on the captive screws to move the panel out enough to grasp by the side edges.

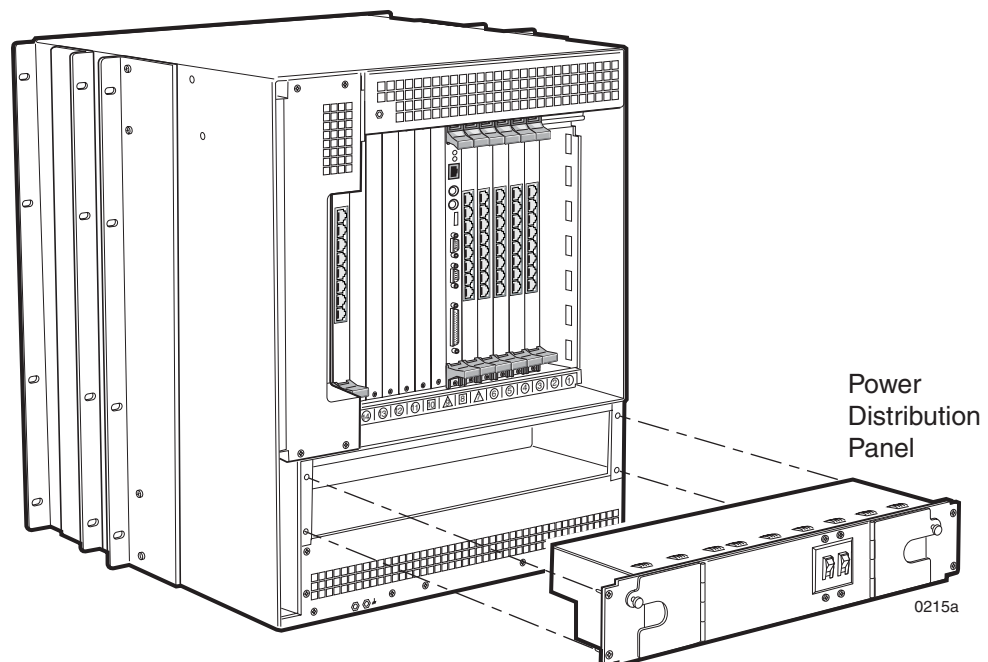


Figure 4-4. Power Distribution Panel Removal

Installing Power Distribution Panel

To install the power distribution panel:



Note

When replacing a DC Power Distribution Panel, **replace it with the same type.**

You do not need to remove the power supplies when installing a Power Distribution Panel, although backing the power supplies out slightly can facilitate the installation of the panel.

Step 1

Insert the Power Distribution Panel straight into the chassis. Ensure that the panel's connectors are aligned with the power supply connectors and that they seat firmly.



Caution

If the panel does not fully insert, do not force it in—forcing it can bend the connector pins. Instead, back the panel out, verify that the connectors are aligned properly, and re-insert it.

Step 2

Tighten the four captive screws in the corners of the Power Distribution Panel.

Step 3

Replace the power cable.

Step 4

Turn on the CPX-1000.

Module Removal and Installation

Use this procedure to replace a CPX-1000 plug-in module, remove it from the shelf and install another module.

The CPX-1000 must be powered off in order to replace any plug-in modules. Future releases of the system will include the ability to hot swap modules.



CAUTION CLASS 1 LASER

Use of controls, adjustment, or performance of procedures other than those specified herein may result in hazardous, invisible radiation exposure.

Do not look directly into fiber optic connector socket or you may seriously harm your eyes.



Warning

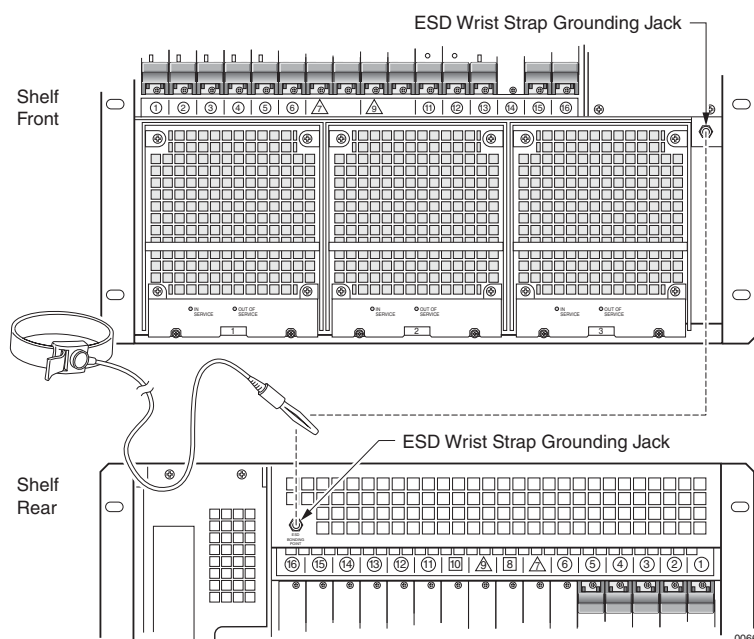
Some components of the CPX-1000 Voice Services Platform include field-replaceable batteries. A new battery can explode if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.



Electro-Static Caution

The CPX-1000 circuit cards can be damaged by static electricity that builds up on work surfaces and on your body. Static is produced by the everyday movement of your body and is released as an Electro-Static Discharge (ESD) when you touch an object. Observe the following precautions whenever you are working with the CPX-1000.

Always wear a grounded wrist strap to prevent ESD. ESD can damage the CPX-1000 card assemblies and solid state components in the CPX-1000. Be sure to attach the wrist strap to the grounding jack located on the front or rear of the equipment.



Warning

Handle all printed circuit cards by the face plate, extraction ears, or assembly edges. Never touch the components, conductors, or connector pins.

Always store and transport cards in antistatic packaging. If you remove a card from its slot, always put it into its antistatic package immediately.

Keep static generating materials such as food wrappers, plastics, and polystyrene foam containers away from card assemblies.

A fully-assembled CPX-1000 Voice Services Platform has 16 single-width module slots. Figure 4-5 and Figure 4-6 show the front and rear views of STM-1; Figure 4-7 and Figure 4-8 show the front and rear views of DS-3.

Your equipment may not include the EC or ECAC module (if your installation does not need echo cancellation and compression) nor some of the E1 and ATM (STM-1 or DS-3) modules (if you have less than a fully loaded redundant shelf).

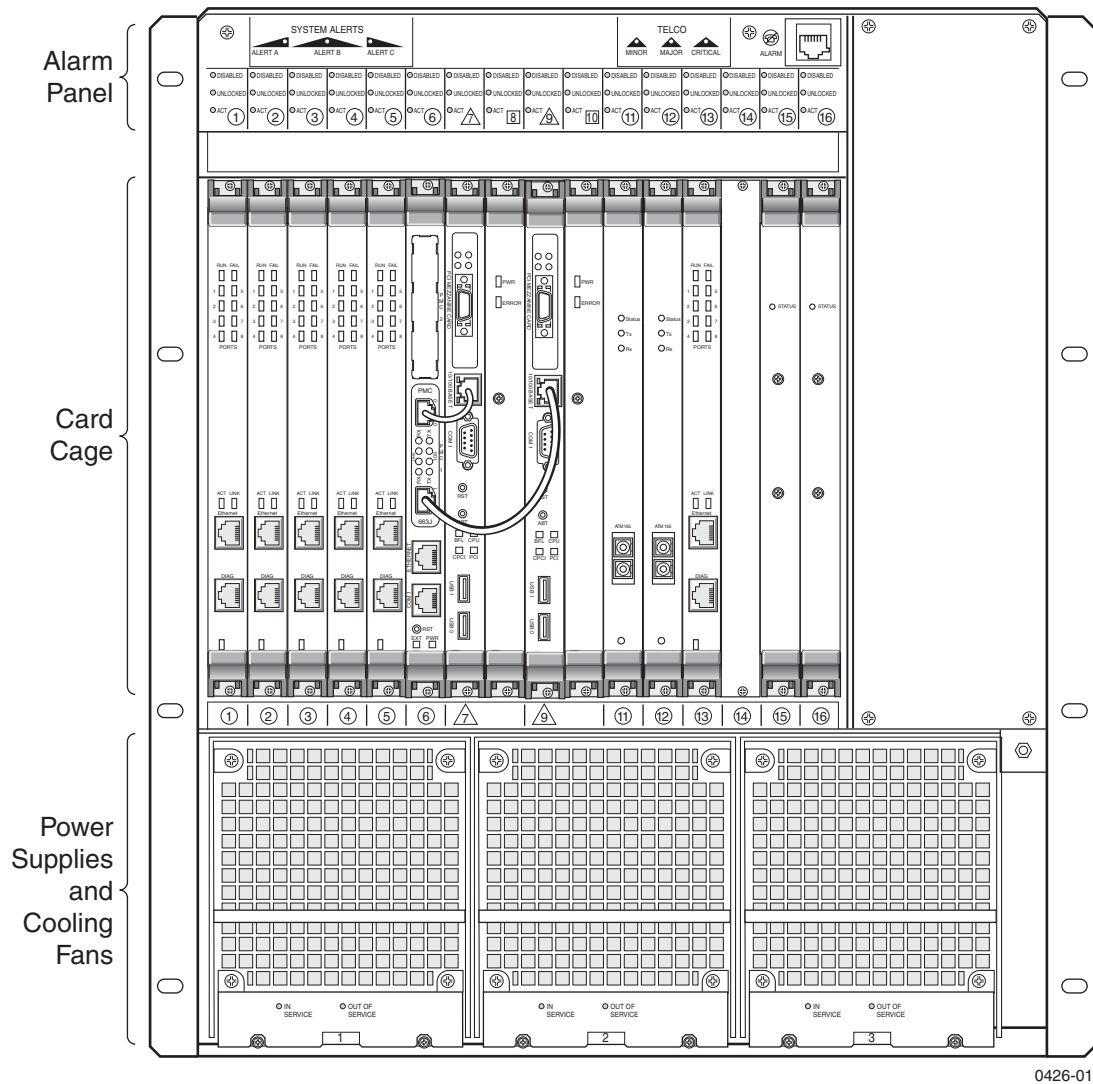


Figure 4-5. Fully-redundant STM-1 Shelf (Front View)

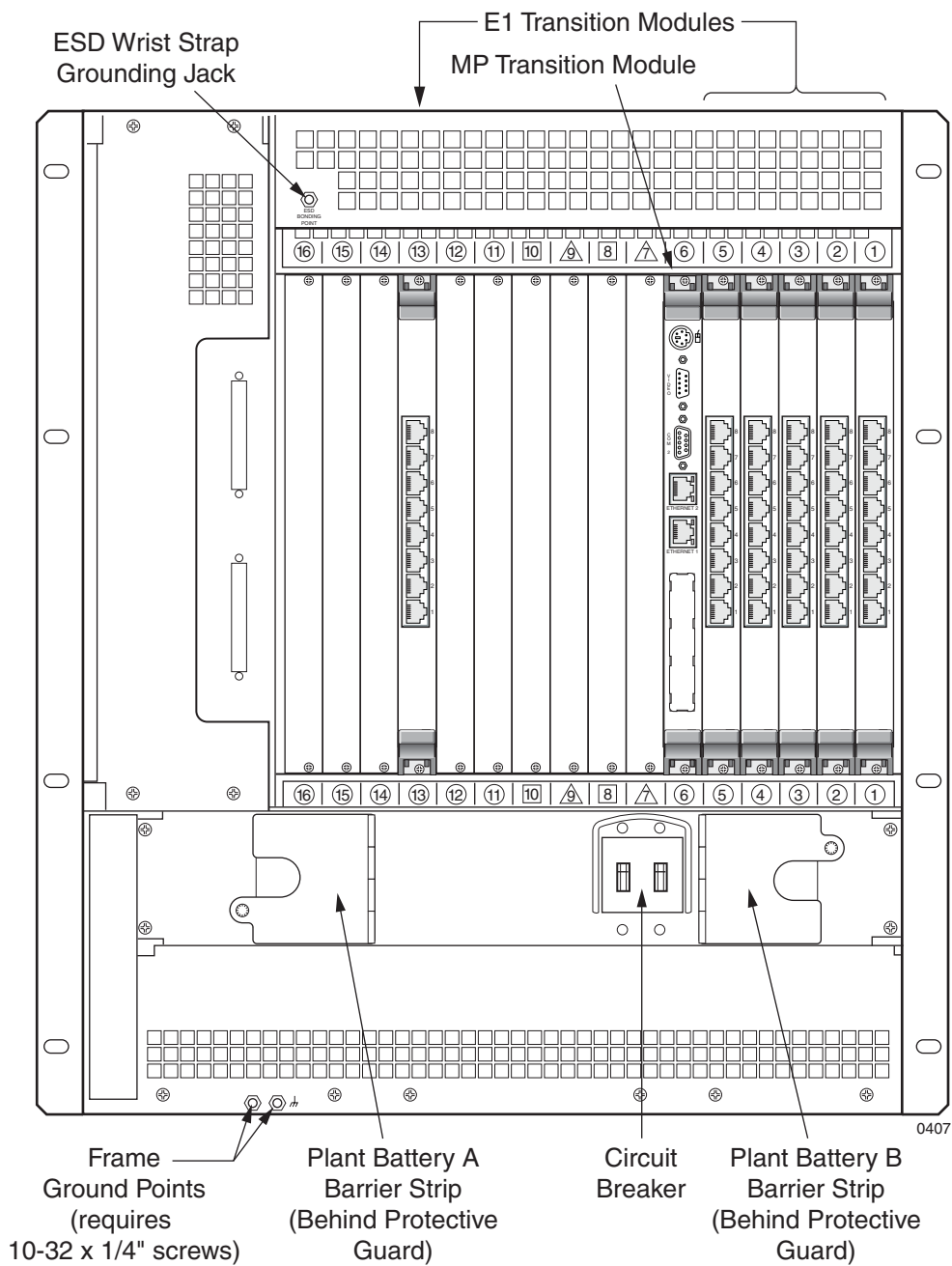


Figure 4-6. Fully-redundant STM-1 Shelf (Rear View)

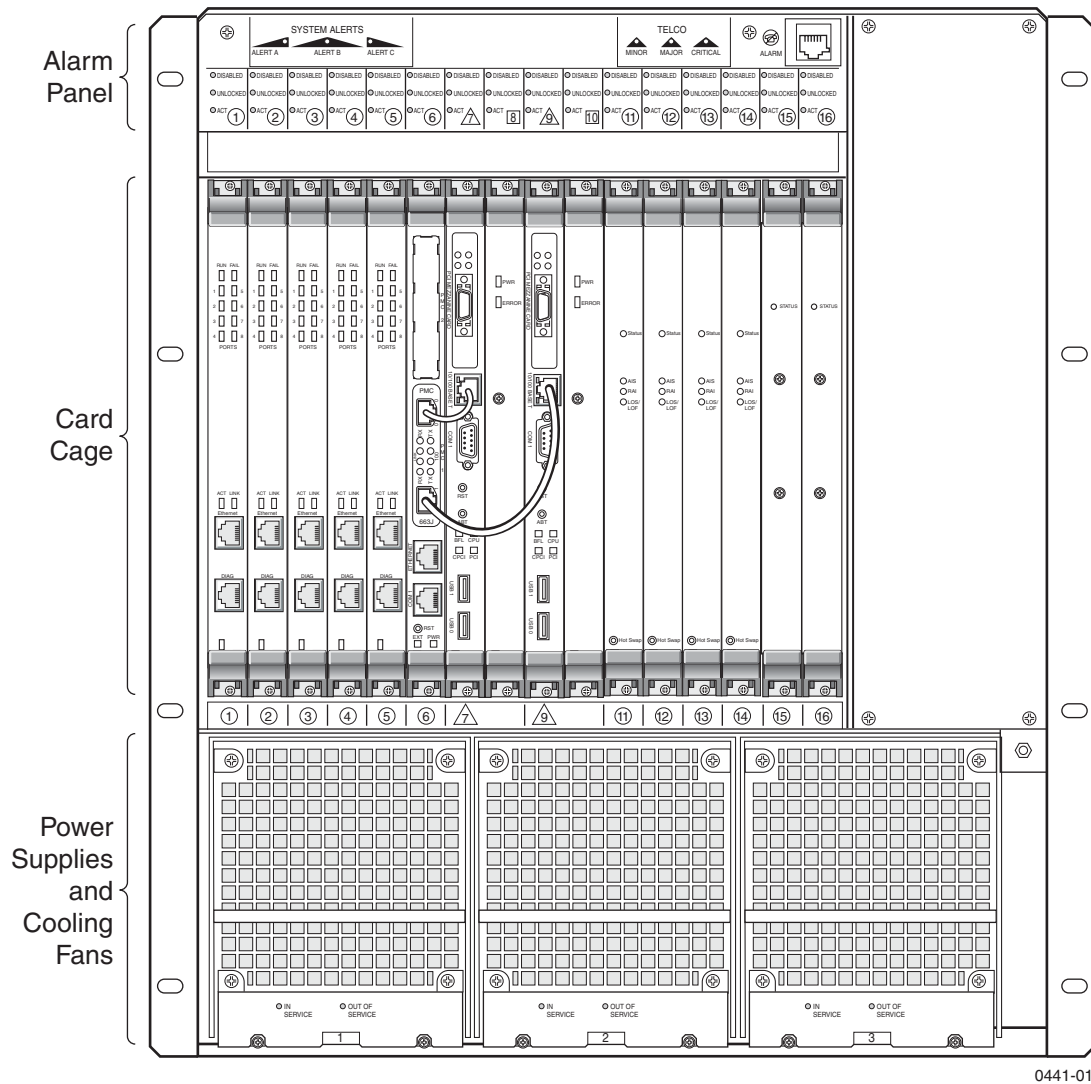


Figure 4-7. Fully-redundant DS-3 Shelf (Front View)

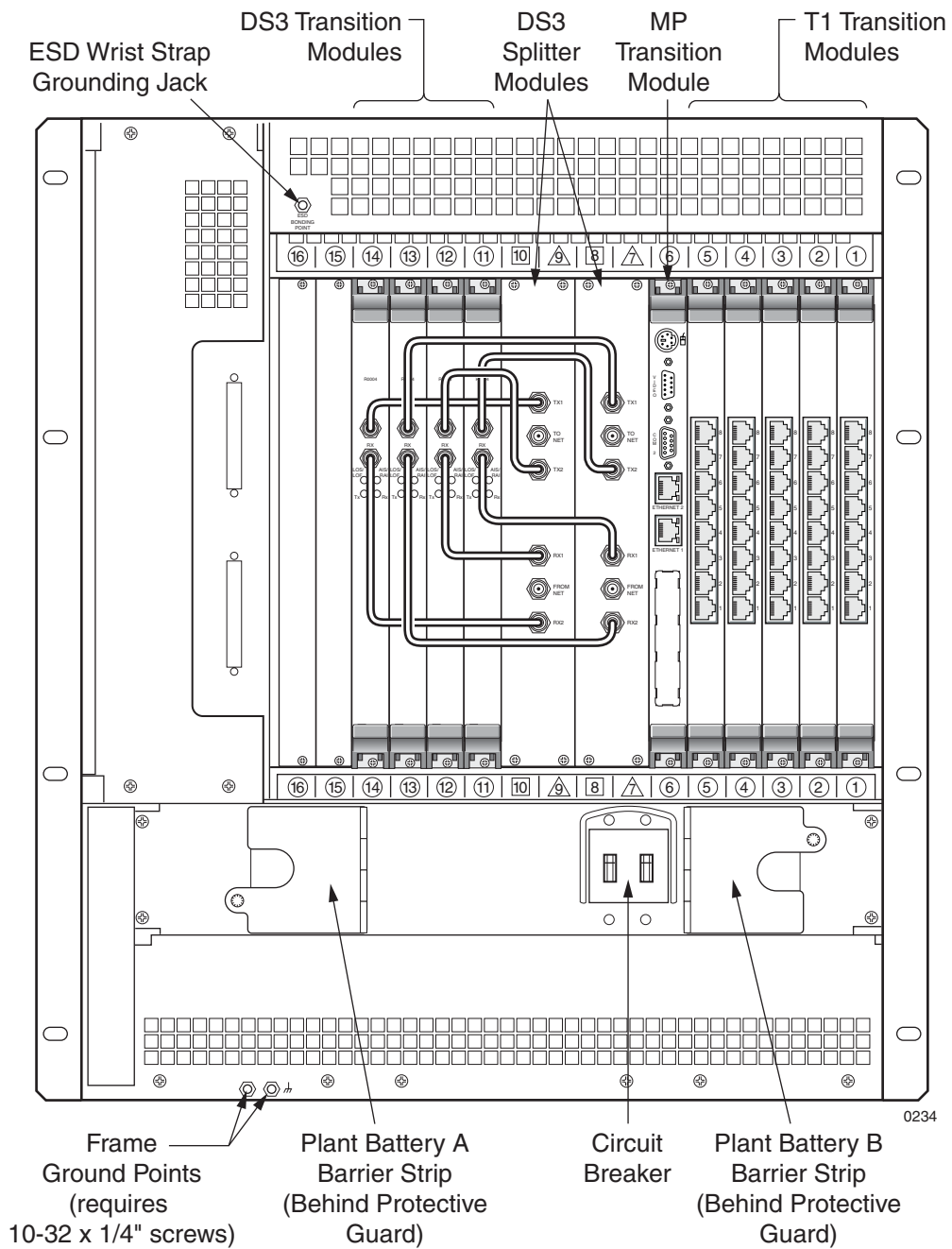


Figure 4-8. Fully-redundant DS-3 Shelf (Rear View)

Removing and Replacing Cards from the CPX-1000 Shelf

- Step 1** Remove the inter-module cables, as necessary.
- Step 2** Put on an antistatic wrist strap, and plug the other end of the strap into the ESD ground jack in front (or back) of the CPX-1000.
- Step 3** Use a Phillips screwdriver to loosen the top and bottom captive screws on the front panel of the module.



Notes

When removing a CP card, remove the CP card first, followed by the HSC. Then insert them in the reverse order—HSC first then the CP.

When removing the MP and line cards, remove the front cards first, followed by their corresponding transition cards. Then insert them in the reverse order: transition cards first then the front cards. For cards that are not coupled with transition cards, skip the transition card instructions.

Replacing cards in the wrong order causes damage to the cards.

- Step 4** Flip the card ejectors (Figure 4-9) and wait for the Hot Swap light (the blue laser at the bottom of some cards).

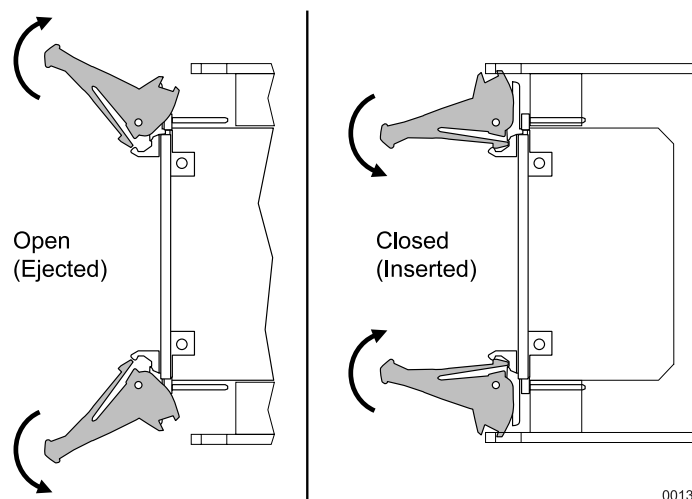


Figure 4-9. Module Extractors

- Step 5** Remove the front (line) card.
- Step 6** Remove the transition (rear) card.
- Step 7** Insert the new cards: transition card first then front card.



Important

Do not force the card into place: this may cause damage to the connector pins.

- Step 8** Snap the card ejectors into the locked position.

Hot Swapping

Hot swapping lets you remove and replace cards without shutting down and reconfiguring the CPX-1000. JetCraft supports hot swapping on all cards.

- To hot swap an MP card, go to Hot Swapping an MP Card, below
- To hot swap CP and HSC cards, go to page 4-19
- To hot swap line cards, go to page 4-20



Notes

Make sure to put on an anti-static wrist wrap when hot swapping cards. Refer to *JetCraft User's Guide*.

When removing a card—always remove the processing module (front) before removing the transition module (back).

When inserting a card—always insert the transition module (back) before inserting the processing module (front).

Hot Swapping an MP Card

To hot swap an MP card:

- Step 1** Back up the current CPX-1000 database. (Refer to *JetCraft User's Guide*.)
- Step 2** Click the MP card from the Tree or Shelf views.

- Step 3** Select **Remove Resources** from the Configuration menu. A prompt appears, asking if you want to remove all resources associated with the card.
- Step 4** Click **Yes**. The card is removed from the Tree and Shelf views.
- Step 5** Remove and replace with the new cards per **Removing and Replacing Cards** from the CPX-1000 Shelf on page 4-17.
- Step 6** Select **Refresh CPX** from the File menu. The new MP card appears in the Tree and Shelf views.
- Step 7** Restore the CPX-1000 configuration. (Refer to *JetCraft User's Guide*.)

Hot Swapping CP and HSC Cards

HSC cards are paired with CP cards. When you hot swap the CP-A card, you will also need to swap the HSC-A card. After the HSC card is replaced, pairing with the CP card is automatically restored.

To hot swap CP and HSC cards:

- Step 1** Click the CP card icon from the Tree or Shelf view.
 - If hot swapping an active CP or HSC card, continue with Step 2.
 - If hot swapping a standby CP or HSC card, continue with Step 3.
- Step 2** Perform switchover to place the active card in standby. (Refer to *JetCraft User's Guide*.)
- Step 3** Place the CP card to the Locked state. (Refer to *JetCraft User's Guide*.)
- Step 4** Select **Remove Resources** from the Configuration menu. A prompt appears, asking if you want to remove all resources associated with the card.
- Step 5** Click **Yes**. The card is removed from the Tree and Shelf views.
- Step 6** Remove the physical CP card, followed by its corresponding HSC card, from the CPX-1000 shelf (**Removing and Replacing Cards** from the CPX-1000 Shelf on page 4-17).
- Step 7** Insert the HSC card, then insert the CP card, and lock them in place using the card ejectors (**Removing and Replacing Cards** from the CPX-1000 Shelf on page 4-17). (Continue with Step 9 if this is a standby CP or HSC card.)

- Step 8** Select **Refresh CPX** from the File menu. The new cards appear in the Tree and Shelf views.
- Step 9** Place the CP card to the Unlocked state. (Refer to *JetCraft User's Guide*.)

Hot Swapping Line Cards

Line cards are paired with their corresponding transition cards. When you hot swap a line card, you will also need to swap its corresponding transition card.

Line cards include:

- ATM (STM-1 and DS3)
- TDM-8E1
- EC
- ECAC
- 12-port E1 ECAC

CPX-1000 supports both planned and unplanned Hot Swap.

Planned Hot Swap

To perform a planned hot swap of a line card:

- Step 1** Click a line card that you want to hot swap from the Tree or Shelf View.
- Step 2** Place the selected line card to the Locked state. (Refer to *JetCraft User's Guide*.)
- Step 3** Select **Remove Resources** from the Configuration menu. A prompt appears, asking if you want to remove all resources associated with the card.
- Step 4** Click **Yes**. The card is removed from the Tree and Shelf views.
- Step 5** Remove the physical line card first, followed by its corresponding transition card, from the CPX-1000 shelf.
- Step 6** Insert the new physical transition card, followed by the line card, and lock them in place, using the card ejectors.
- Step 7** Select **Refresh CPX** from the File menu. The new card appears in the Tree and Shelf views. The state of the card automatically changes to "unlocked," and all resources for that card are restored.

Unplanned Hot Swap

An unplanned hot swap involves the removal and replacement of a module without first locking the resource.

To perform an unplanned hot swap of a line card:

- Step 1** Depress the ejector and wait until the blue hot swap light indicates that the module can be removed by becoming lit.
- Step 2** Remove the physical line card first, followed by its corresponding transition card, from the CPX-1000 shelf.
- Step 3** Insert the new physical transition card, followed by the line card, and lock them in place, using the card ejectors.

Hot Growth

You can add cards to their assigned slots in the CPX-1000 shelf without losing calls or rebooting the CP or MP cards or the CPX-1000.

- Step 1** Insert a card to its assigned slot.



Notes

Be sure to put on an antistatic wrist strap, and plug the other end of the strap into the ESD ground jack in front (or back) of the CPX-1000 before installing new cards. Refer to *JetCraft User's Guide*.

Insert the transition card first, then insert the front card. For cards that are not coupled with transition cards, skip the transition card instructions.



Important

Do not force the card into place—this may cause damage to the connector pins.

- Step 2** Snap the card ejectors into the locked position.
- Step 3** Select **Refresh** from *JetCraft* to see the new card(s).
- Step 4** Provision the cards, as required. (Refer to *JetCraft User's Guide*.)

Replacement Parts

This appendix lists part numbers for the replacement parts of the CPX-1000 Voice Services Platform.

Part Number	Component	Description
1002-B1-001	ATM-STM-1S	ATM STM-1 Single Mode Fiber (SMF) Module (includes processing card only—no transition card required)
1002-B1-002	ATM-STM-1M	ATM STM-1 Multimode Fiber (MMF) Module (includes processing card only—no transition card required)
1002-B1-003	ATM-DS3	ATM DS3 Module (includes processing and transition cards)
1001-B1-001	TDM-8E1/T1	Octal E1 Module (includes processing and transition cards)
1003-B1-001	EC	Echo Cancellation Module (64 ms, 672 DS0) (includes processing card only—no transition card required)
1001-B1-003	TDM-12 Port E1	E1 ECAC module with onboard Eco Cancellation and Compression (processing and transition cards)
1000-F1-201	CP-2	Control Processing Card (includes processing card only—no transition card required)
1000-F1-202	HSC-3	Hot Swap Controller Card (includes processing card only—no transition card required)
1000-F1-203	MP-3	Management Processor Module (includes processing and transition cards)
1000-F1-803	Power Supply Module	Integrated 48VDC Power supply & fan module
1000-F1-803	Fan Module	Fan only module
1000-F1-804	Alarm Module	Chassis alarm panel

Part Number	Component	Description
1000-F1-805	Fan Filter	Air Filter Kit - 3 filters
1000-A1-000	DS3 Splitter	Splitter assembly and cables for DS-3 protection, set TX & RX

Console User Commands

Logging In

The CPX-1000 core console enables remote troubleshooting of the CPX-1000 equipment. The login procedure is included in this appendix for reference.

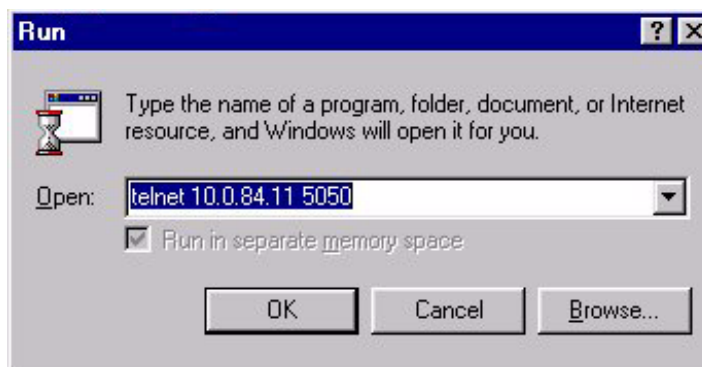
To log into the control console, Telnet to port 5050 (CP-A) or 6050 (CP-B) on the target CPX-1000 and enter the console username and password.

When you first login there are two default types of access and default usernames and passwords assigned to them:

Type of access	User Name	Password
Normal Operator	user	user
Administrator	admin	admin

Step 1

From Start, click Run, and enter IP address and CP number (5050 or 6050):





Notes

Command lines are automatically converted to lower case upon entry (makes commands case-*insensitive*). The Up and Down arrows show the command history.

To allow spaces in a command line argument, surround the whole argument in double-quotes.

Press the ESCAPE key to cancel the current command line.

Step 2

Enter user or admin name and password:

```

Telnet - 10.0.84.11
Connect Edit Terminal Help
Welcome to the Jetstream CPX-1000

Username: admin
Password: *****

[A:AC] Cpx>
  
```

Table B-1. CP High Availability States

State	Description
AC	Active
HS	Hot Standby
GA	Going Active
GS	Going Hot Standby
UK	Unknown
??	Error
CS	Cold Standby

Step 3

To see what commands are available to your username (user or admin) type `?` and the following screen appears:

```

BT
w Options Transfer Script Window Help

help

** Commands Summary *****
? -- Displays a command summary or usage information
cking -- Displays the active clock source, which can be BITS, IFG/DS1, or internal
crv -- Displays details for all ports in a V5 interface group
exit -- Ends the current console session
help -- Displays a command summary or usage information
sword -- Changes password of a user
state -- Shows the administrative state of the specified component
clock -- Prints the entire clock priority table
wecac -- Show resource usage for all ECAC cards
wport -- Displays information on the specified port
roups -- Lists all ATM portgroups
owpps -- Shows which CCS and EOC links are currently active
stnpg -- Displays information about PSTN protection groups
stats -- Displays statistics for the component specified
tatus -- Displays the operational status of various system components
sub -- Displays subscriber summary or details
fstat -- prints status of V5 interface in trace log
nstat -- print E1 Link state
tstat -- reports link ID and time slot for given C-channel ID
rsion -- Shows CPX software version

```

Step 4

The key to gathering Telnet info is the `?`:

Cpx> `?` – Displays a summary of all user or admin commands

Cpx> `? <command name>` – Displays detailed help on `<command-name>`

Cpx> `<command-name> ?` – Displays detailed help about `<command-name>`

**Note**

The CPX-1000 does not support partial command prompting. Type in the entire command.

Step 5

Type `exit` to quit the Telnet session.

User Console Commands

The following is a list of user commands with a brief description.

?	Displays a command summary or usage information.
clocking	Displays the active clock source, which can be BITS, IFG/DS1, or the internal clock.
crv	Displays details for all ports in a V5 interface group.
exit	Ends the current console session.
help	Displays a command summary or usage information.
setpassword	Changes password of a user.
showadminstate	Shows the administrative state of the specified component.
showclock	Prints the entire clock priority table.
showecac	Show resource usage for all ECAC cards.
showport	Displays information on the specified port.
showportgroups	Lists all ATM port groups.
showpps	Shows which CCS and EOC links are currently active.
showpstnpg	Displays information about PSTN protection groups.
stats	Displays statistics for the specified component.
status	Displays the operational status of various system components.
sub	Displays subscriber summary or details.
v5ifstat	Prints status of V5 interface in trace log.
v5lnstat	Print E1 Link state.
v5protstat	Reports link ID and time slot for given C-channel ID.
version	Shows CPX software version.

?

Displays a command summary or usage information

clocking

Displays the E1 port that's sourcing the network clock reference.

Usage:

`Cpx> clocking`**Note**Board number is *not* the same as slot number.

Board number is determined by order of initialization (initialization order is slots 1 to 6 and then slots 16 to 9).

Boards are numbered 1 through n

Lines are numbered 0 through 7

crv

Displays CRV details.

Typing:	Displays
<code>Cpx> crv <ifg> all</code>	All CRVs or L3 addresses in Interface Group <ifg>

exit

Ends the current console session.

Usage:

`Cpx> exit`**help**

Displays a command summary or usage information. Usage:

`Cpx> help` – Displays a summary of all the commands available`Cpx> help <command name>` – Displays detailed help on <command-name>`Cpx> <command-name> help` – Displays detailed help on <command-name>**setpassword**

To change default password; use set password cond:

Setpassword<username><new password>

Example:`[A:AC] cpx. setpassword user user1`

showadminstate Shows the administrative state of the specified component.

Usage:

```
Cpx> showadminstate portgroups
```

```
Cpx> showadminstate ports
```

showclock Prints the entire clock priority table.

Usage:

```
Cpx> showclock
```

showecac Show resource usage for all ECAC cards.

Usage:

```
Cpx> showecac
```

showport Displays information on the specified port.

Usage:

```
Cpx> showport
```

showportgroups Lists all ATM portgroups

Usage:

```
Cpx> showportgroups
```

showpps Shows which CCS and EOC links are currently active.

Usage:

```
Cpx> showpps
```

showpstnpg Displays information about PSTN protection groups.

Usage:

```
Cpx> showpps
```

stats Displays statistics for the component specified.

Usage:

```
Cpx> stats sys
```

```
Cpx> stats ifg <ifg>
```

```
Cpx> stats ds1 <ifg> <ds1>
```

```
Cpx> stats sub <sub>
```

```
Cpx> stats port <sub> <port>
Cpx> stats atm <device>
```

status

Displays the operational status of various system components.

Usage:

```
Cpx> status software – Displays status of the
                        system software links
Cpx> status atm – Displays status of ATM ports
                  and portgroups
Cpx> status sub <sub> – Displays status of a
                        subscriber
```

sub

Displays subscriber summary or details.

Usage:

```
Cpx> sub – Displays valid sub ranges
Cpx> sub <sub> – Displays detailed info for
               <sub>
Cpx> sub <sub1> <sub2> – Displays summary for
                        range <sub1> to <sub2>
```

v5ifstat

Prints status of V5 interface in trace log.

Usage:

```
Cpx> v5ifstat <ifnum x> – Prints status of
                        specified interface
                        number.
```

v5lstat

Print E1 Link state.

Usage:

```
Cpx> v5lstat <intf> <link> – Prints state of
                        specified interface ID
                        and specified link ID.
```

v5prostat

Reports link ID and time slot for given C-channel ID.

Usage:

```
Cpx> v5prostat <intf> <chan ID> – Reports link
                        ID and time slot for
                        specified interface ID
                        and specified protected
                        logical C-channel ID.
```

Admin Console Commands

The administrator commands include the user commands listed above, plus these commands available only to administrators:

clearstats	Clears statistics for the component specified
fan	Sets or shows the status of the chassis fan speeds
portloop	Establishes a voice path between two subscriber ports
reboot	Reboots the CP
restartsub	Sends a restart request to a subscriber
setactiveport	Sets the active port in an ATM port group
setcdv	Displays/sets ATM Cell Delay Variation (CDV)
setechocancel	Sets Echo Cancellation type for a given subscriber port
setlinelen	Sets the E-1 line length or Line Build Out (LBO)
tap	Tap/monitor H.110 time slots
vpath	Displays active voice path information

clearstats

Clears statistics for the component specified.

Usage:

```
Cpx> clearstats sys
Cpx> clearstats ifg <ifg>
Cpx> clearstats ds1 <ifg> <ds1>
Cpx> clearstats sub <sub>
Cpx> clearstats port <sub> <port>
Cpx> clearstats atm <device>
```

fan

Sets or shows the status of the chassis fan speeds

Usage:

```
Cpx> fan – Displays the current speed of all
the PowerSupply fans
Cpx> fan [1-3/all] stat – Displays the current
fan speed
Cpx> fan [1-3/all] low/high – Sets the fan
speed to Low or High
```

Where:

all = all fans (the default)

portloop

Establishes a voice path between two subscriber ports.

Usage:

```
Cpx> portloop on <sub1> <port1> <sub2> <port2>
- Establishes a voice path between the two
ports
Cpx> portloop off <sub1> <port1> <sub2>
<port2> - Disconnects a previously established
portloop
```

reboot

Reboots the CP

Usage:

```
Cpx> reboot verify
```

restartsub

Sends a restart request to a subscriber

Usage:

```
Cpx> restartsub <sub> [<immed>]
```

Where:

```
<immed> = 0 = Wait until <sub> has no active calls
           (default)
<immed> = 1 = Restart immediately
```

setactiveport

Sets the active port in an ATM port group

Usage:

```
Cpx> setactiveport <portgroup> <port>
```

setcdv

Displays/sets ATM Cell Delay Variation (CDV)

Usage:

```
Cpx> setcdv - Displays current Cell Delay
Variation
Cpx> setcdv <newcdv> - Sets a new Cell Delay
Variation
```

Where:

```
<newcdv> = Maximum jitter to tolerate in
received cells from subscribers (in
milliseconds)
```

setechocancel

Sets Echo Cancellation type for a given subscriber port

Usage:

```
Cpx> setechocancel <sub> <port> none/far - Sets
Echo Cancellation for one port on a subscriber
Cpx> setechocancel <sub> all none/far - Sets Echo
Cancellation for all ports on a subscriber
```

**Note**

This setting is a temporary override only and is overwritten by any reprovisioning.

setlinelen

Sets the E-1 line length or Line Build Out (LBO)

Usage:

```
Cpx> setlinelen <ifg> [<ds1>] - Shows the Line
Length setting for <ifg>
Cpx> setlinelen default <length> - Sets the default
Line Length setting for all ifgs
Cpx> setlinelen <ifg> all/<ds1> <length> - Sets the
Line Length for <ifg>
```

Where:

```
<length> = 0 - length of 0 - 133ft.
<length> = 1 - length of 133 - 266ft.
<length> = 2 - length of 266 - 399ft.
<length> = 3 - length of 399 - 533ft.
<length> = 4 - length of 533 - 655ft.
```

tap

Tap/monitor H.110 time slots

Usage:

```
Cpx> tap - Shows currently configured taps
Cpx> tap on <timeslot> <Tlcard> <Tlport> <ds0> -
Monitor <timeslot> on the specified E1 DS0
Cpx> tap off <timeslot> - Disable existing tap on
<timeslot>
```

Where:

```
<timeslot> = H.110 timeslot to tap (0-4095, get
from sub or crv displays)
<Tlcard> = E1 card used to tap (1-N, counted from
left to right)
<Tlport> = E1 port on <Tlcard> used to tap (1-8 =
Port A-H)
<ds0> = DS0 on <Tlport> used to tap (1-24)
```



Note

You cannot use an E1 card to tap a timeslot being sourced from that same E1 card.

vpath

Displays active voice path information

Usage:

`Cpx> vpath all` – Displays all active voice paths in the system

`Cpx> vpath <timeslot>` – Displays the voice path associated with <timeslot>

Where:

<timeslot> = H.110 timeslot (0-4095, get from sub or crv displays)

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